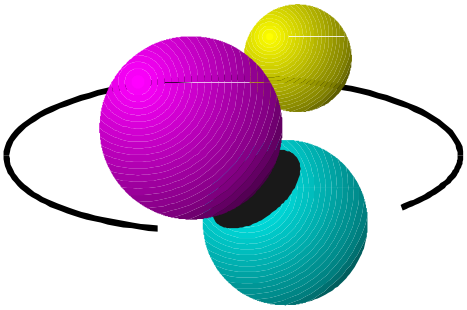
USER'S MANUAL FOR THE

Big Paint



IMPORTANT

Before you begin...

Please complete the attached Warranty Registration Card and return it to Summa today. (Users outside Europe, Africa and the Middle East should check the address on the back of the Warranty Registration Card.)

Failure to return the duly completed Warranty Registration Card might delay response to your warranty and service enquiries.

NOTE

When selecting software drivers: If the Summa name is not mentioned in the list of available software drivers, use Summagraphics drivers.

Summa
DIGITAL IMAGING TECHNOLOGY

FCC NOTICE

The BigPaint has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. These cutters generate, use, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this Printer in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Caution !

Changes or modifications, not expressly approved by CalComp, who is responsible for FCC compliance, could void the users authority to operate this equipment.

DOC NOTICE

The BigPaint does not exceed the Class A limits for radio noise for digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

VCCI-1 (CLASS 1) NOTICE

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SECTION 1

GENERAL INFORMATION

INTRODUCTION

The BigPaint has been designed to produce computer-generated graphic designs on cut sheet or roll media.

This manual is a reference guide for installing and operating the BigPaint.

PRODUCT FEATURES

The following are the main features of the BigPaint:

- Full-colour ink-jet print head
- Variable media widths up to 1550 mm
- 12-key control panel
- Convenient operator control via a 2-line 16-character liquid crystal display
- Menu mode for selection of the printer power-up operating configuration
- Up to four separate user configurations stored in non-volatile memory
- Media support system for automatic loading of media
- Automatic media pull from roll
- Media sensing
- Pick-up roll for continuous printing
- Big Ink Supply system for continuous working

- Simple origin adjustment to any location
- Draft, Normal and high quality print mode
- Uni- and bi-directional print mode
- Prime and cartridge alignment test
- Extensive internal test routines
- Communication with host computer via Centronics parallel interface and possibility for two way communication via standard serial RS-232-C.
- Handles the universal HP RTL print language
- Basket (optional)
- Possibility to change quickly between two sets of inks

BigPaint user MANUAL

This user manual provides the following information :

- **Full technical specifications for the BigPaint and the media to be handled**
- **A complete description of the main components of the BigPaint**
- Step-by-step instructions for cartridge and media loading
- Instructions for online and local mode (✋) operations
- Instructions for USER CONFIGURATION, INTERNAL TESTS and PRINTER SETTINGS operations
- Maintenance and cleaning instructions
- Information about the RS-232-C and Centronics interface cables used to inter-connect the printer and IBM, IBM-compatible, Apple and Apple-compatible host computer.

SPECIFICATIONS

Printer

	BigPaint	
Height	1120 mm	44,1 inch
Width	2450 mm	96,3 inch
Depth	740 mm	29,1 inch
Weight	80 kg	176 lb.

TABLE 1-1 :
BIGPAINT SPECIFICATIONS

MEDIA

	BigPaint	
	mm	inch
Width	200-1550	8-61
Thickness	0.05 to 0.25	0.002 to 0.01
Max. Printing width	1511 mm	59.5 inch
Min. Margin*	25 mm	1.0 inch
Front Margin	25 mm	1.0 inch
Rear Margin Sensor on Sensor off	 85 mm 65 mm	 3.3 inch 2.6 inch

* for positioning of the pinch rollers (see section 1.8.)

TABLE 1-2 :
BIGPAINT MEDIA SPECIFICATIONS

Media Types

A wide range of media types has been evaluated and tested on the BigPaint. When using duly certified media, operation in accordance with the functional specifications of the model is warranted. Other media should be certified by CalComp before use to ensure performance in compliance with specifications.

For a full list of all duly certified media suitable for friction drive operation, see Appendix A.

TOOLS

The BigPaint is supplied with :

- **500ml ink of each color, 4 filled cartridges and a spare.**
- **standard service station and service station for pigmented ink.**
- **special tools to clean the big ink system.**

Tool	*Colour*	*Quantity supplied*
Cartridge		
SummaPaint ink cartridge with special connections to the big ink supply system.	Yellow, Cyan, Magenta, Black, Neutral	One of each.
Ink		
SummaPaint ink.	Yellow, Cyan, Magenta, Black	500 ml of each color
Service station		
Factory set with standard service station service station for pigmented inks enclosed	-	One of each.
Cleaning tools		
syringe and tube with connection	-	One of each.

TABLE 1-3 :
BIGPAINT TOOLS

To order ink kits, contact your local dealer, quoting the part numbers listed in table 1-9. The BigPaint will only perform according to specifications if the

CalComp genuine tools are installed. Do not replace the tools with products from other manufacturers.

INTERFACE

Communication	standard asynchronous RS-232-C and Centronics half pitch parallel interface
Serial : I/O Port connector	DB-9P
Mating connector	DB-9S
Byte format	8 data bits, 2 stop bits, no parity
Baud rate	38400, 19200, 9600, 4800, 2400 bps
Parallel : I/O Port connector	Centronics half pitch female
Mating connector	Centronics half pitch male

TABLE 1-4 :
BIGPAINT INTERFACE SPECIFICATIONS

FIRMWARE

Printing Language	RTL-subset
ROM-based plots	Prime plot, Colour and Bi-directional alignment plot

TABLE 1-5 :
BIGPAINT FIRMWARE

Performance

Printing specifications on 0.05 mm (0.002") wax-backed vinyl, total media thickness not greater than 0.25 mm (0.010")

Printing Modes	Draft, Normal or High Uni- or Bi-directional	
Printing speed		
Draft (full size)	Bi-directional	14 min/m^2
Normal (full size)	Bi-directional	16 min/m^2
High (full size)	Bi-directional	33 min/m^2
Printing resolution	300 dpi	
Mechanical resolution	0.0127 mm	0.0005"

TABLE 1-6 :
BIGPAINT PERFORMANCES

Certifications

CE Certificate
FCC Class A
EN 50022 : 1994
EN 50082-2 : 1995
IEC 950, EN 60950
UL 1950
CSA 950

ENVIRONMENTAL

(printer without media)

Operating Temperature	15 to 35° C	59 to 95° F
Storage temperature	-30 to 70° C	-22 to 158° F
Relative humidity	35 - 85 %, non condensing	

TABLE 1-7 :
BIGPAINT ENVIRONMENTAL SPECIFICATIONS

IMPORTANT HINT

The use of dimensionally stable media is an essential pre-requisite to obtain high quality. Additionally, media expansion or contraction may occur as a result of temperature variations or humidity changes.
To improve the dimensional stability of media, let it stabilise to the current environmental conditions before usage, for a minimum period of 24 hours.

Electrical

Mains Supply : 48-62 Hz, single phase.

Nominal line	Min./Max. line	BigPaint Fuse	CalComp order number
100/120 V AC	89 - 130 V AC	T 4A, 250V, 5x20mm	MF9004
220/240 V AC	197 - 260 V AC	T 2A, 250V, 5x20mm	MF9003

TABLE 1-8 :
BIGPAINT ELECTRICAL SPECIFICATIONS

CAUTION

Replace the fuse only with the fuse type specified by CalComp.

effe controleren

Printer ACCESSORIES AND CONSUMABLES

The following is an overview of the accessories and consumables available for the BigPaint:

Options/ Accessories/ Consumables	BigPaint
Quick Start	MI9963
User' s Manual	MI9962
Printer cable	404-923
Power Supply CablesPower Supply Cables	market specific
Serial Interface Kit, consisting of: - 9 pin to 9 pin cable - 9 pin to 25 pin converter - 9 pin to 8 pin DIN converter	423-155
Extra 4 Ink supply bottles	400-590
Basket	400-596
SummaPaint Color Kit Kit with 500 ml of ink and a inkcartridge	Yellow : 400-631 Magenta : 400-632 Cyan : 400-633 Black : 400-634
Flange for media roll ∅ 3 inch	400-564
Flange for media roll ∅ 2 inch	400-563
Manual cut-off razor blades (set of 10)	391-146
Razor blade & holder	391-295
Media : **CalComp has a wide range of material that guarantees high quality images on paper, vinyl, canvas, clear film, backlite,… . CalComp also has laminate to protect your drawings and use them outdoor.**	

TABLE 1-9

BigPaint accessories and Consumables.

REAR PANEL COMPONENTS

In order to get acquainted with your BigPaint, read the following description of the rear panel components. Figure 1 - 1 shows the location of the main components.

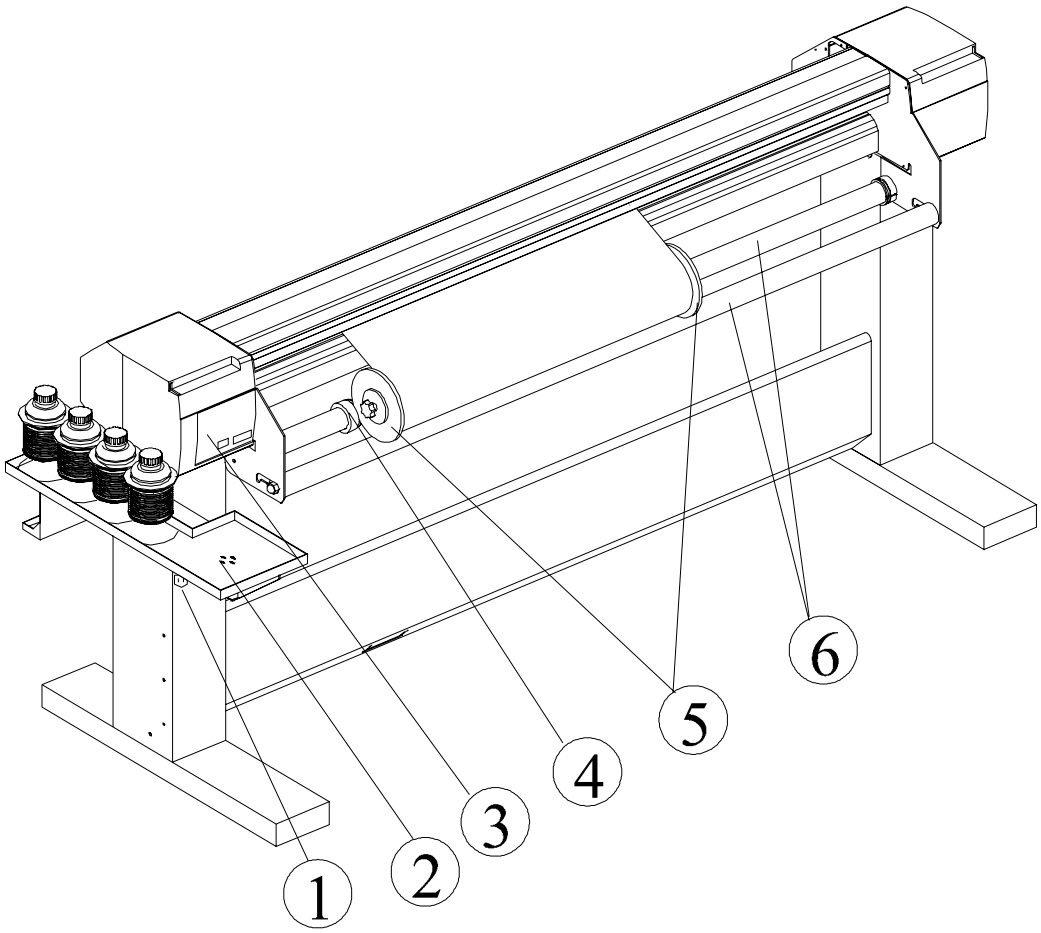


FIGURE 1-1
BIGPAINT, REAR VIEW

1. ***Power Entry Module****:* - The fuse box and the AC power cord receptacle are located in the power entry module.

The power-up procedure is explained in detail in Section 1.6.

For information on the conversion of the operating voltage, see Section 3.2.

2. ***Big ink supply system :*** - The BigPaint comes standard with two sets of bottles

3. ***Controller*** *:* - For details see further.

4. ***Roll Media Guide Bushes :*** - The two guide bushes serve to keep the media roll in place when media is pulled from the roll.

5. ***Media Flanges :*** - The media flanges ensure proper routing of the media roll.

6. ***Media Support Roller :*** - Rotating support rollers for the media roll.

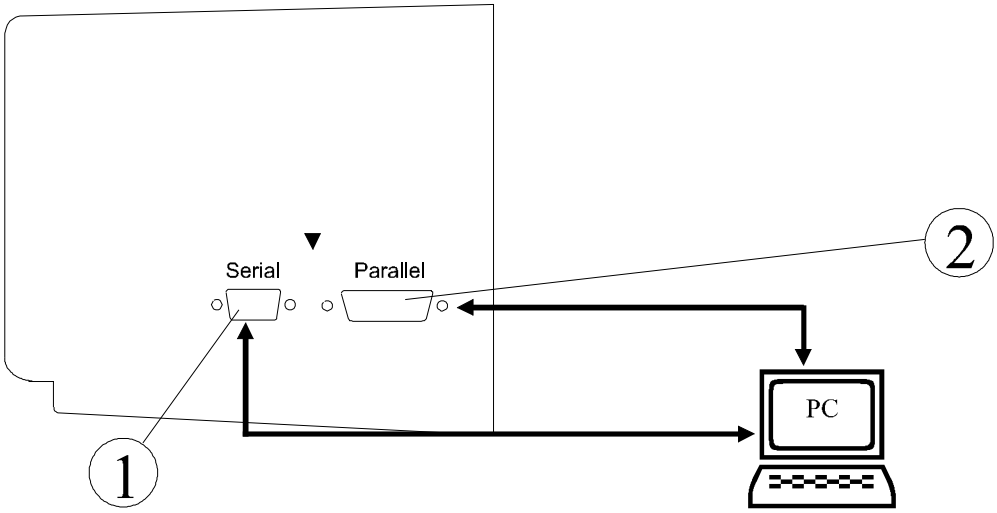


FIGURE 1-2
BIGPAINT, CONTROLLER

1. ***RS-232-C Port* :*** - This DB-9P connector provides the communication link between the printer and a host computer. It allows bi-directional communication between the host computer and the printer.

2. ***Parallel Port* :*** - This printer port provides a unidirectional communication link between the printer and a host computer. The BigPaint can receive print and cut data, but not transmit data via this port.

* *Note : only one interface can be active at a time.*
The first port receiving data will be the active interface until the printer is reset.

FRONT PANEL CONTROLS

In order to get acquainted with your BigPaint, read the following description of the front panel controls and components. Figure 1 shows the location of the main components.

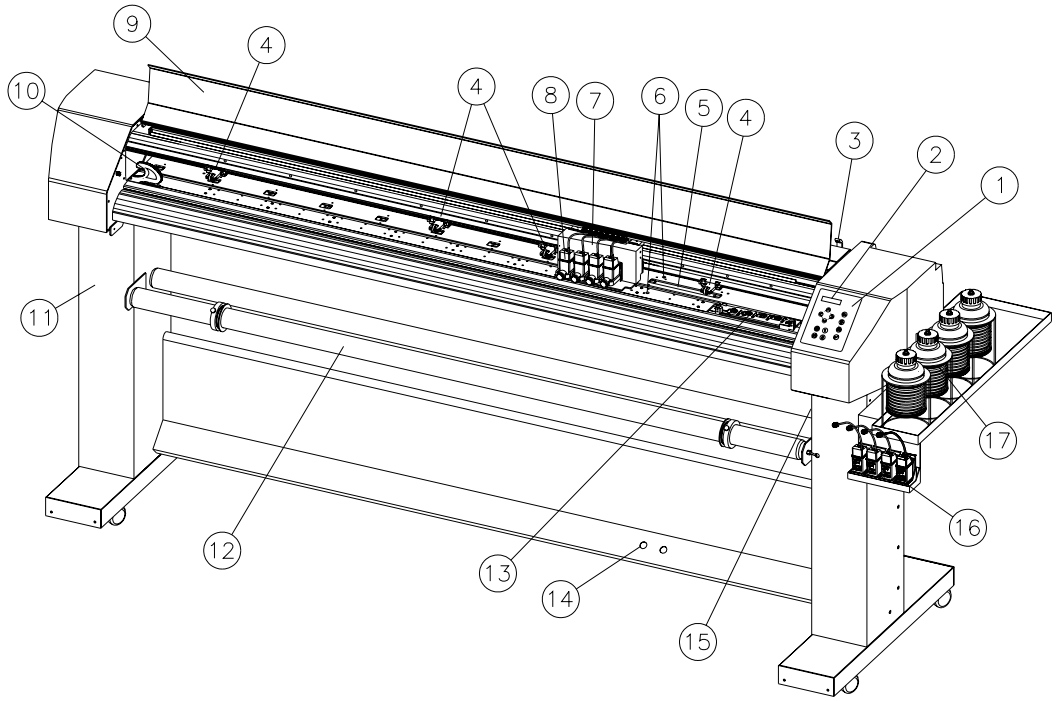


FIGURE 1-3
BIGPAINT, FRONT VIEW

1. ***Control Panel*** *:* - The control panel has 12 keys. All machine activity can be initiated from the control panel. This includes initiating remote mode for computer control, local mode for manual operation and menu mode. Each control panel function is explained in Section 2.2.

2. ***Display*** *:* - The 2x16 character display informs the user about the current status or about actions that need to be taken.

3. ***Pinch roller lever arm*** *:* - This lever is used to raise and lower the pinch rollers (Media loading is discussed in Section 1.8).

4. ***Pinch rollers*** *:* - The pinch rollers (one at each side) hold the media clamped between the rubber rollers and the media drive sleeves. The unit is provided with two extra low pressure rollers in the middle to keep the media flat.

5. ***Media Drive Sleeves*** : - The media drive sleeves move the media only when the pinch rollers are in the 'down' position. The following table lists the number of media drive sleeves installed on the BigPaint

Number of media drive sleeves	**BigPaint**
Short sleeve	9
Long sleeve	1

6. ***Sensors :*** - The sensors detect the presence of media.

7. ***Inkjet Carriage*** : - The inkjet carriage is the mount for the inkjet head.

8. ***Ink Cartridge*** : - An ink cartridge is a small reservoir of ink on which a print head is mounted. (For the installation of the cartridge see further.)

9. ***Safety Cover*** : - The safety cover prevents the human body from being hit by the moving carriage. Therefore it is advised to close the cover while the unit is working. This cover also prevents dust from falling on the newly printed drawing.

10. ***Manual cut-off knife :*** - Upon completing a print-out, move the media forward (it is best to use "ORIGIN" for this). Use the manual knife to cut the finished sign off the media roll.

11. *STAND* ***:*** **- THE STAND COMES STANDARD WITH THE BIGPAINT.**

12. ***Pick-up roll*** : - The pick-up roll makes it possible to roll up the printed material. This way the unit can print unattendedly without damaging a drawing.

13. ***Service station*** : The service station cleans the printing head and prevents the head from drying out when the unit is not working. The service station needs to be cleaned regularly.

14. ***Pick-up sensor*** : - This sensor senses the media. When the media reaches too close to the ground the pick-up roll will be activated. This way, it prevents the pictures from touching the ground.

15. ***Power ON/OFF switch*** : - This rocker switch sets the unit' s power to ON or OFF. To switch the power ON, press the "I" side of the rocker switch. To switch the power OFF, press the "O" side of the rocker switch.

16. ***Cartridge compartment*** : - When a cartridge is not being used, it is advised to place it in a cartridge clamp. These clamps can be placed in the cartridge compartment.

17. ***Big ink supply bottles*** : - The big ink supply bottles can handle 500 ml. ink of each colour. The big ink supply system enables long unattended printing without refilling the ink.

POWERING UP THE PRINTER

GROUNDING

SAFETY WARNING

An insulated earth conductor must be installed as part of the branch circuit which supplies power to the wall outlet to which the printer is connected. The ground conductor must have the same size, insulation material and thickness as the grounded and ungrounded branch-circuit supply conductors, but the insulating sheath should be green, or green with yellow striping.

The ground conductor described above must be grounded at the electrical distribution board, or, if power is supplied by a separate system, at the power supply transformer motor / generator set.

The wall sockets into which the printer is plugged must be of the grounded type. The earth conductors serving said wall sockets must be properly connected to earth.

CAUTION

Before plugging in the printer' s power cord to a power source, make sure the unit has the right fuse installed in the power inlet module. (T4A for 100 /120V or T2A for 220 / 240 VAC) (see section 3).

See Table 1-8 for the minimum and maximum operating voltage for the different voltage ratings.

For information on the exact fuse ratings, see Section 3.

Plug the power cable in the inlet at the rear of the stand (right hand leg), and plug the other end of the power cable into a properly grounded electrical outlet of the correct voltage.

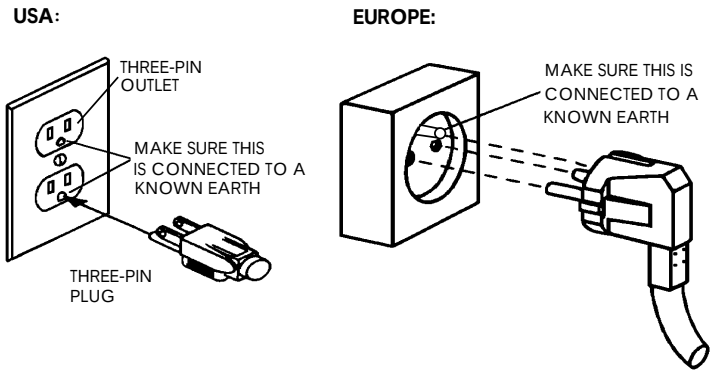

USA:
THREE-PIN OUTLET
MAKE SURE THIS IS CONNECTED TO A KNOWN EARTH
THREE-PIN PLUG
EUROPE:
MAKE SURE THIS IS CONNECTED TO A KNOWN EARTH

FIGURE 1-4
EARTH CONNECTION

IMPORTANT OPERATIONAL TIP

Your BigPaint must only be used with a power outlet that is properly grounded to earth. Use of an unearthed outlet exposes the operator to risk of electric shock and will also lead to malfunctioning of the printer.

Connecting the computer cables

1. Plug one end of the long serial cable into the unit (at the rear of the right hand cover) and screw the two long screws tight.

2. Plug the other end of the serial cable into a serial port of the computer (two extra adapters are available for different port types on the computer side) and screw the screws tight.

3. Plug one end of the parallel cable into the unit (at the rear of the right hand cover) where the subscription 'PARALLEL' is written.

4. Plug the other end of the parallel cable into the parallel port of the computer and screw the screws tight.

POWER-UP PROCEDURE

SAFE OPERATION

Do not place any objects in front of, or behind, the unit that could interfere with the operation of the unit. Make sure the media is free to move back and forth. Keep hands, hair, clothing and jewellery away from moving parts.

➔ To power up the your BigPaint, proceed as follows:

1. Make sure the unit is either placed on a flat, level and sturdy surface or securely attached to its stand.

2. Switch on the switch on the left side of the right hand leg.

3. Follow the instructions on the LCD (only by first time set up).
   - Use the and jogging keys to select the desired language, and press the ✔ key to confirm your selection.
   - Select the menu units by means of the **1** and **2** keys.

4. The message "INSERT MEDIA" is displayed on the LCD when no media is loaded and the pinch rollers are in the up position.

LOADING MEDIA

The following procedures are mainly written for using roll media . When using sheets there are two possibilities. Firstly, when using long sheets, roll the sheet up so that the alignment is identical to that of a roll. Secondly, when using short sheets, alignment is not so important. If the sheet is cut off perpendicularly, it can be aligned to the front border.

Positioning the Pinch Rollers

When working with cut sheet or roll media, the traction resulting from the contact between the pinch rollers and the drive sleeves moves the media in the X axis (forward/backward).

Proper movement of the media will only occur if the media is driven by the pinch rollers correctly located over two drive sleeves.

The pinch rollers are lowered or raised simultaneously by means of the pinch roller lever arm located on the right hand side of the printer, next to the control panel. The rollers must be lifted to facilitate media loading when it is fed from the rear of the printer to the front.

When in the up position, the pinch rollers can be moved manually to the left or the right along the pinch roller shaft, so that they can be easily positioned in a detent (click position) where they are to be lowered to ensure optimum traction on the media.

When the pinch rollers are in the up position, the message "LOWER CAM ROLLERS" is displayed on the LCD.

CAUTION

Always make sure that the pinch rollers are fully raised before sliding them to the left or right.

The pinch rollers MUST be positioned correctly and lowered onto the media before an automatic load sequence is initiated. Make sure that the two outer pinch rollers are positioned above the drive sleeves. The left pinch roller should be positioned in a detent (click position). The right pinch roller should be positioned somewhere on the long drive sleeve that only has a click position at the beginning and at the end of the sleeve. The drive drum will move the media only when the pinch rollers are lowered onto the sleeves.
Before lowering the pinch rollers, carefully check the position of the rollers in relation to the drive sleeves. When the pinch rollers are DOWN, the two outer rollers must run over the sleeves in order to ensure proper media traction. It is very important that both media edges always rest on the sleeves in such a way that the two outer pinch rollers, which are positioned 3 to 15 mm (0.1" to 0.6") from the media edge, will run over the sleeves when lowered to the drive drum.
Two, three or more sleeves may be partly or fully covered, depending on the media width used.
The central low-pressure rollers are used to enhance media routing and keep the media flat.
For media widths smaller than 600 mm, *the central low-pressure rollers can be positioned in the UP position to disable it.*

feeding and positioning media

The loading procedure described below has been found to give excellent repeatability. When loading media, adhere to these step-by-step instructions strictly.

➔ To load media, proceed as follows:

1. Raise the pinch rollers by means of the pinch roller lever arm located on the right-hand side of the unit, next to the control panel.

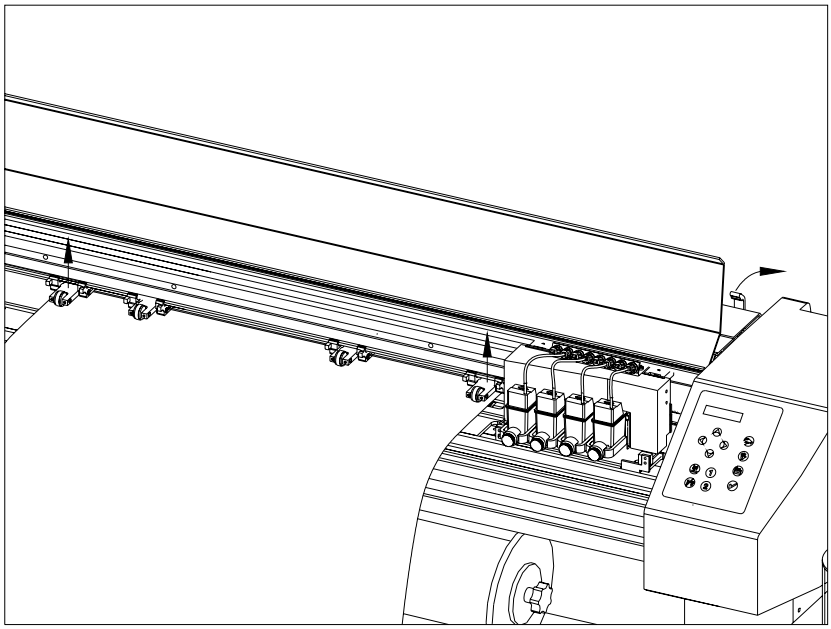


FIGURE 1-5
MEDIA POSITIONING

2. When working with roll media proceed by inserting a media flange at each end of the media roll and tighten the thumbscrew until the media roll is firmly gripped between the flanges. Make sure the flanges are firmly pressed against the roll. Place the roll of media on the media support rollers at the rear of the machine.

3. Position the media roll with flanges on the support rollers at the rear of the machine.
   Slide the two roll media guide bushes under the media roll so that the roll flanges run into the groove provided in the guide bushes. In this position the media roll and guide bushes can be shifted from the left to the right.
   Start feeding the media from the rear of the machine.
   Position the *left media edge* on the *left-most drive sleeve* and check whether the *right media edge* is positioned over the *long drive sleeve*. If so, the *left pinch roller* can be positioned in *a click position* over the *left-most* sleeve and the *right pinch roller* is positioned *somewhere* over the *long drive sleeve* to suit the media width. The pinch roller can be lowered anywhere between the two click positions of the long drive sleeve to allow for flexibility in holding any media width.
   In circumstances where the above does not work, because your media is too narrow to reach the long drive sleeve, try positioning the left media edge over the second left drive sleeve and position the right media edge

somewhere on the long drive sleeve. Repeat this process if the media is found still to be too narrow, locating the left media edge on the third sleeve from the left and adjusting the right hand position as previously described.
In all cases, both edges of the media have to run over a drive sleeve. If this is not the case, reposition the roll of material to comply with the above.

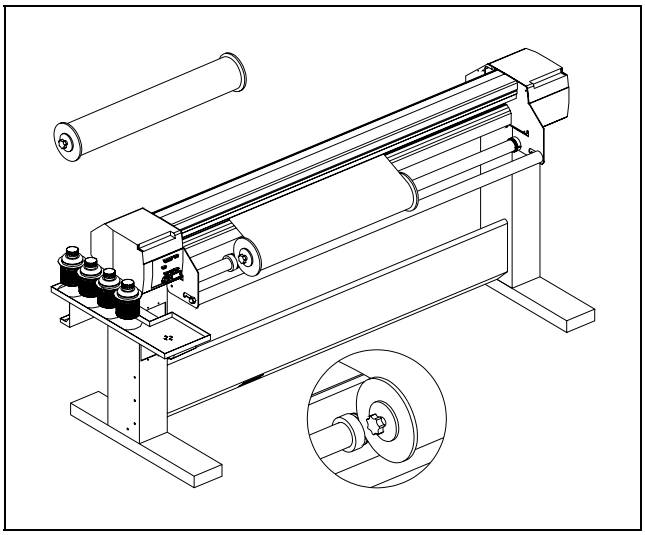


FIGURE 1-6
FEEDING ROLL MEDIA USING MEDIA FLANGES

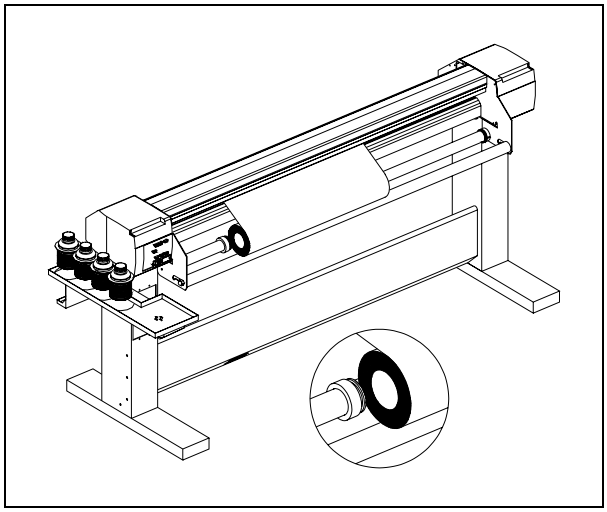


FIGURE 1-7
FEEDING ROLL MEDIA WITHOUT USING MEDIA FLANGES

4. Make sure that the media follows a straight path from the roll of material. To accomplish this, you can slide the media roll and guide bushes from the left to the right along the media support rollers.

5. The pinch rollers should be positioned over the drive sleeves about 3 to 15 mm (0.1" to 0.6") away from the media' s outer edges.

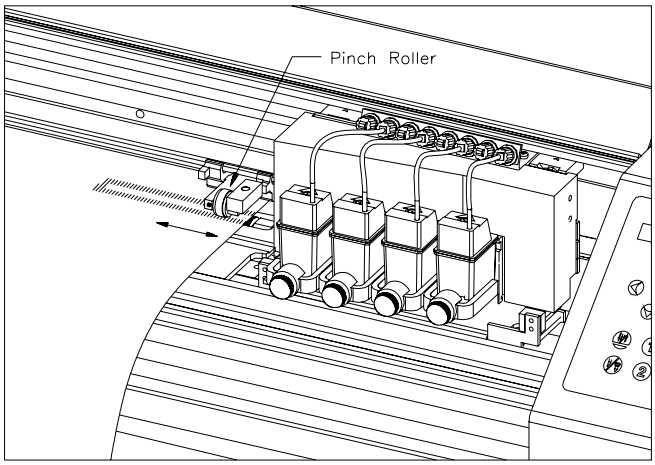


FIGURE 1-8
PINCH ROLLER POSITIONING

For wide media, slide the central low-pressure rollers into position. Ideally, they should divide the media into three similar parts and must be above a drive sleeve. If the central low-pressure roller does not run over one of the drive sleeves, you may have to turn the knob on the back of the low-pressure roller to disable this roller.

6. Lower the pinch roller lever to press the media firmly against the drive sleeves. After one second the carriage automatically moves from the right to the left to sense the media width that can be used.

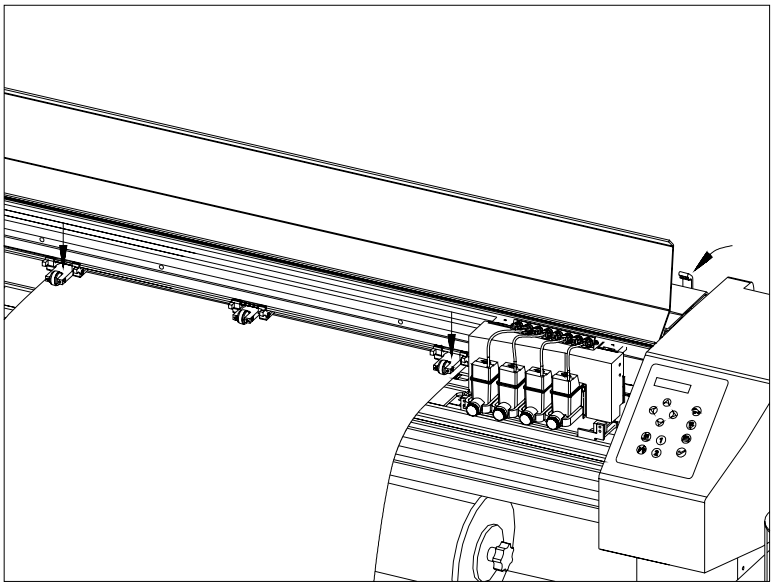


FIGURE 1-9
CLOSING PINCH ROLLERS

NOTE

It is best not to unroll the media manually from the roll. The machine will unroll the media automatically during the load sequence.

7. The positioning and routing of sheet material is identical to that of roll media.

8. The unit is now ready for the actual load procedure, which may be controlled from the control panel.

PICK-UP ROLL

1. Before using the pick-up roll, make sure that the following menu items are correctly set:

   Pick-up roll : on
   Front sensor : off

   To set these menu items, press the Menu key (MENU) until the message 'USER CONFIG. 1' appears on the display.

   Press the jogging key until the message 'PICK-UP ROLL' is displayed. Make sure that this setting is 'ON'. If not, press the key. Press the ✔ key to confirm the selection.

   Press the jogging key to select 'FRONT SENSOR'. Make sure that this setting is 'OFF'. Should this not be the case, press the key to switch to OFF. Press the ✔ key to confirm this selection.

2. Use the pick-up core with flanges installed on the two front rollers.

3. Open the camrollers.

4. Route the media as shown in Figures 10 and 11. Fix the media onto the pick-up core using some tape. Make sure that the media follows a straight path from the pick-up roll to the media roll.

   ***Note**: In order to minimise the loss of unprinted vinyl an extra sheet of waste vinyl can be used to make the routing between the pick-up core and the beginning of the media.*

5. Close the camrollers.

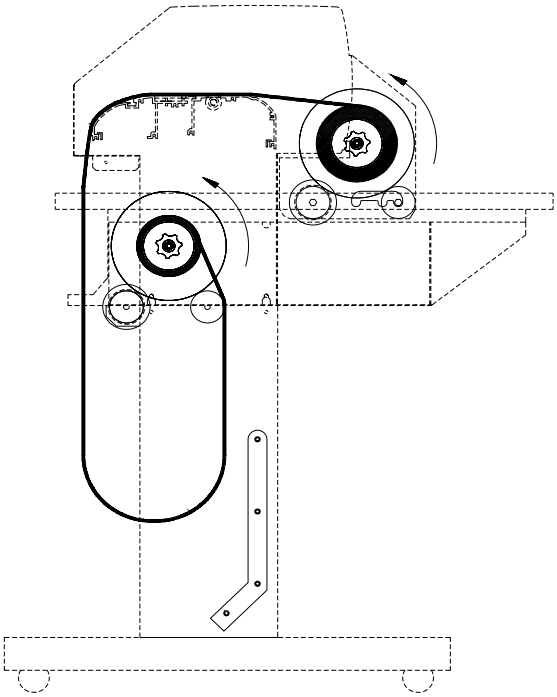


FIGURE 1-10
MEDIA ROUTING - SIDE VIEW

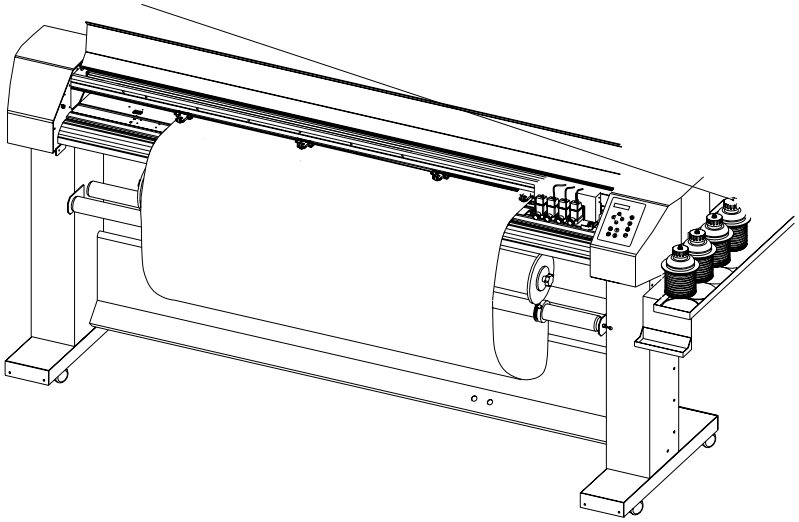


FIGURE 1-11
MEDIA ROUTING USING THE PICK-UP ROLL - FRONT VIEW

INSTALLING THE INK CARTRIDGES

NOTE

The cartridges will dry out quickly so it is advised to keep them in their original packaging until you're ready to install them.

The service station prevents the drying out of the cartridges. However, if the cartridges are not being used for more than 24 hours it is advisable to put the cartridges back in a cartridges clamp. The cartridge clamps should be kept clean by rinsing them with clean water each time they are used.

Each time one or more cartridges has been (re-)installed it is necessary to re- calibrate the cartridges as described in section 2.

Cleaning of the cartridges is described in section 3.

To install an ink cartridges proceed as follows:

1. Turn on the unit. Make sure that the media is properly loaded. Close all tubes of the ink supply system by means of the clips nearby the inkbottles.

2. When the unit is 'Online' press on the key. The print carriage will move next to the service station. Every three seconds a beep will warn you that the print carriage is not in the service station.

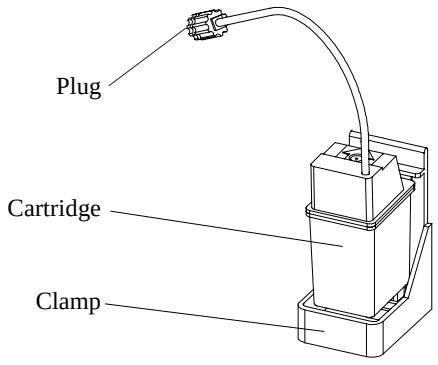


FIGURE 1-12
INKCARTRIDGE AND CLAMP

CAUTION

Handle the cartridge with extreme care, because it is easily damaged.

3. If the cartridge is filled with a transport fluid then first suck this out by means of the syringe. Keep the cartridge in the clamp but remove

the bottom black sticker. If the cartridges are filled with ink, skip this step.

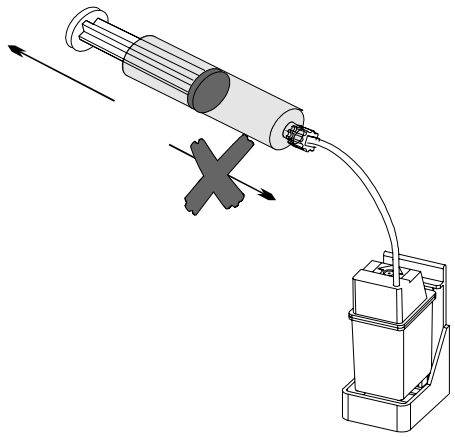


FIGURE 1-13
EMPTYING INKCARTRIDGE

4. When the fluid is completely removed from the cartridge, remove one of the two plugs that has the corresponding color from the print carriage.

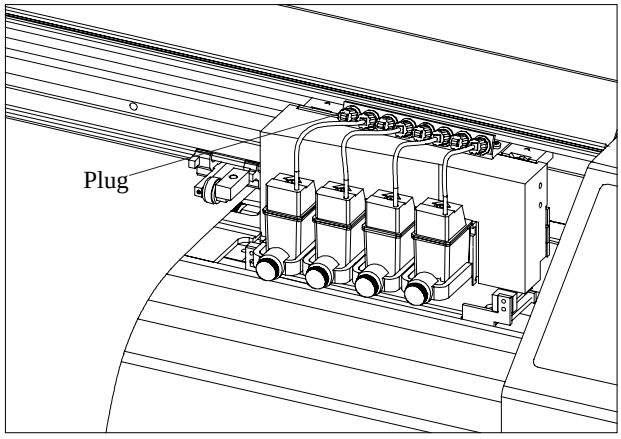


FIGURE 1-14
CONNECTING AN INK CARTRIDGE

NOTE

The unit is equipped with twice four tubes so that two different kinds of ink can be used. To use the four bottles in the front, use the right connections of each colour on the print carriage. To use the four bottles at the back, use the left connections of each colour on the print carriage.

5. Connect the tube of the cartridge to the connector on the print-carriage. Turn the tube a little counterclockwise before connecting

it clockwise so that the tube is not twisted while it' s being connected.

6. Take the ink cartridge out of its clamp. Do not remove any protective tape. Clean the copper contacts with a dampened soft lint free cloth.

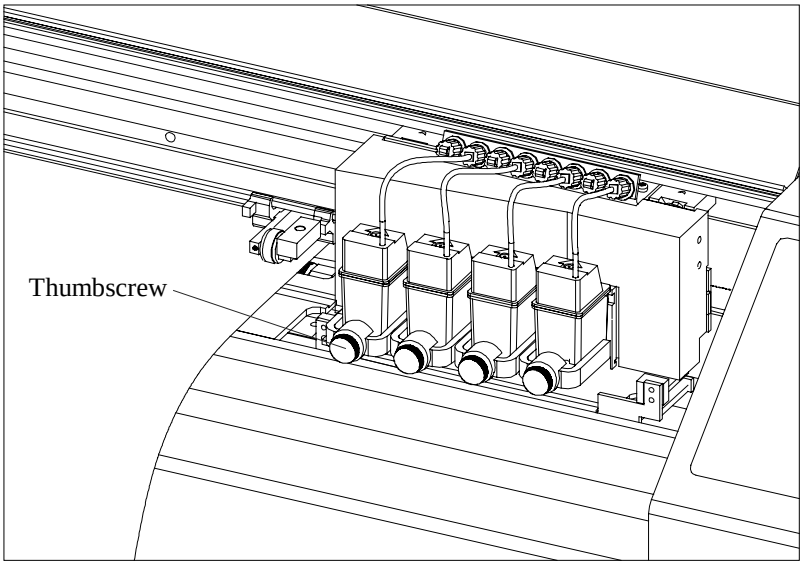


FIGURE 1-15
INSTALLATION OF AN INK CARTRIDGE

7. Turn the thumbscrew on the carriage counterclockwise to make space for the cartridge.

8. Hold the cartridge so that the arrow on top is pointing towards the machine and insert it into the space.

9. Push the cartridge forward and hold it in position. Tighten the thumbscrews clockwise. DO NOT OVERTIGHTEN THEM.

10. Follow steps 3 to 10 for the other cartridges.

11. Open the tubes by opening the clips.

12. Press on any key to move the print carriage back to the service station.

→ To remove a cartridge proceed in reverse order.

Inserting the ink

CAUTION

The ink can be harmful if swallowed. Keep the ink away from children. Wear protective clothing and gloves when working with the ink.

NOTE

If the unit is not being used for a while it is advised to clean the tubes by blowing the ink back into the bottles (See section 3 of the User Manual).

1. Power on the unit. Make sure that the media is properly loaded.
2. When the unit is 'Online' press on the key. The print carriage will move next to the service station. Every three seconds a beep will warn you that the print carriage is not in the service station.
3. Remove the cap of the bottle of the inking system. Pour the matching ink in the bottle and close it tight again.

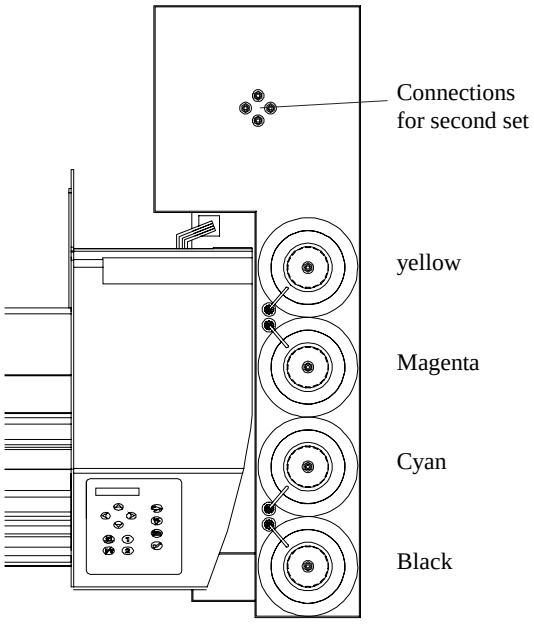


FIGURE 1-16
POSITION OF THE INK BOTTLES

4. Connect the priming bulb on top of the bottle, and make sure that the tube is open by opening the clip nearby the bottle.

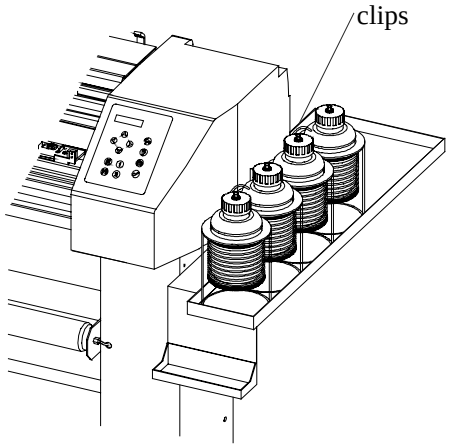


FIGURE 1-17
INK BOTTLES & CLIPS

5. Turn the knob on the carriage counterclockwise to loosen the matching cartridge, and take the cartridge out of its holder. Make sure that the tube of the cartridge is well connected to the print carriage (see above).

6. Make sure that you have some absorbent paper within reach.

7. If the cartridge and the tubes have already been filled, proceed with step 9. If not, hold the cartridge upside down and remove the tape as shown in Figure 1-30. (Do not remove the tape from the nozzles.)

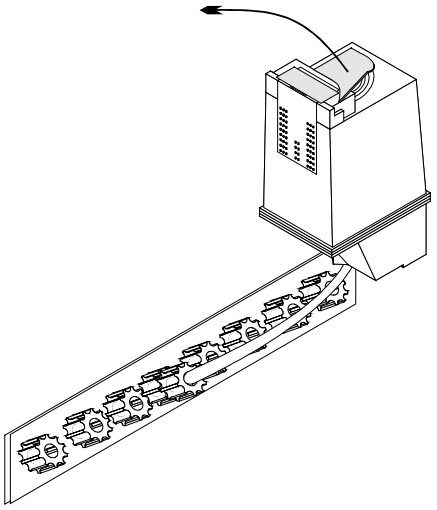


FIGURE 1-18
FILLING THE CARTRIDGE

8. Pump the ink through the tubes. When all the air is out of the tubes and the cartridge is filled for at least 75 %, close the clip nearby the bottle to stop the ink from flowing into the cartridge.

CAUTION

Pump gently! It takes some time before the ink flows through the tubes. Use soft absorbent paper or soft lint free cloth to remove the outcoming ink.

9. Put a piece of adhesive tape on the bottom and on the top of the cartridge (See Figure 1-31).

10. Hold the cartridge with the nozzles down above a reservoir. Remove the protective tape on the nozzles and open the clip nearby the bottle. Some air may appear in the tube. Pump some air in the inkt bottle so that the ink starts leaking through the nozzles. As soon as all the air is blown in the cartridge, close the clip nearby the bottle to stop the ink from flowing to the cartridge. Remove the priming bulb and open the clip again.

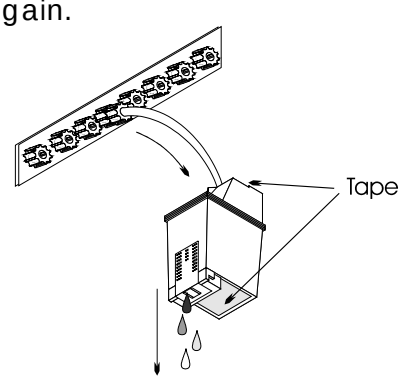


FIGURE 1-19
FILLING THE CARTRIDGE

11. Clean the nozzles and the copper contacts if needed. Never place the cartridge in the print carriage when it is moistened with ink. The ink can be removed with a dampened soft lint free cloth.

12. Hold the cartridge so that the arrow on top is pointing toward the machine and place it back into the holder.

13. Push the cartridge forward and hold it in position. Tighten the thumbscrew clockwise. DO NOT OVERTIGHTEN IT.

14. Follow steps 2 to 12 for the other colors.

15. Press any key to return the print carriage to the service station.

NOTE

To check whether all nozzles are working fine, perform the nozzle test (see section 2). For further calibration of the cartridges, see Section 2.

Refilling Ink

CAUTION

The ink can be harmful if swallowed. Keep the ink away from children. Wear protective clothing and gloves when working with the ink.

NOTE

Make sure that the ink level in the bottles never goes below 1 cm (0.4") in order to prevent air-bubbles from coming in the tubes. Air-bubbles will cause malfunctioning of the printer. When this problem occurs the "Inserting the ink" section (1.12.) has to be repeated until all air-bubbles have disappeared.
Using the bottles until they are completely empty will cause the cartridges to leak, which will result in the picture to be damaged.

Refilling the ink can simply be done as follows:

1. Refilling normally takes just a few minutes so that this can be done while the printer is working.

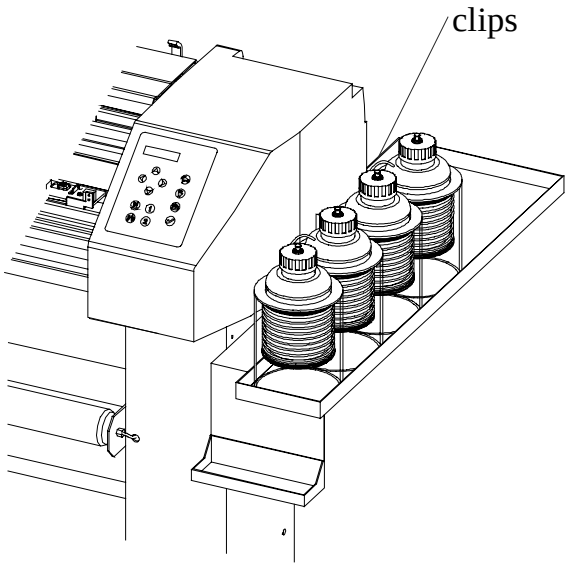


FIGURE 1-20
REFILLING INK

2. Remove the cap of the bottle of the inking system. Pour the matching ink in the bottle and close it tight again.

SECTION 2

OPERATION

summapaint control.

The SummaPaint Control Program for Windows is a tool to optimise the overall cutting and printing quality of your BigPaint.

For information on the installation or general set-up of this program, refer to the 'Readme.txt' file on the installation disk.

The SummaPaint Control program basically has the same functions as the control panel. It is up to the user to decide which way he will work most efficiently. The users who will work with the SummaPaint Control program will notice that it is a very powerful and practical tool.

By clicking on the 'Menu' button in the main SummaPaint Control window all the machine settings can be changed.

Four different user configurations can be saved in the machine' s memory. The selected configuration number is marked at the bottom of the menu window. These four configurations are maintained independently.

THE CONTROL PANEL

Figure 2-1 shows the control panel of the BigPaint. The main functions of the liquid crystal display (LCD) and the control panel keys are explained in the following paragraphs.

FIGURE 2-1
BIGPAINT, CONTROL PANEL

The Liquid Crystal Display

The 32-character liquid crystal display (LCD) contains two lines of 16 characters each. The LCD provides printer status information during operations and displays menu options for the configuration of the printer.

The various menus and submenus items are always presented in a loop, which means that, when the last menu or submenu item is displayed, pressing the appropriate key will automatically take you back to the first item of the same menu or submenu.

Next to the status messages and/or menu options displayed on the LCD, arrow symbols representing the , , , jogging keys and the ✔ key will tell you which keys to press to go to the next menu item (top line of the display) or to the next value for a given submenu item (bottom line of the display).

THE RESET/LOAD Key

The key (RESET/LOAD) is used to move the origin, to initiate a load sequence or to reset the printer. When the key (RESET/LOAD) is pressed it displays the RESET/LOAD menu. Press the key until SET ORIGIN, LOAD or RESET is displayed. To confirm RESET press the key (ENTER). To execute the SET ORIGIN instruction move the knife origin using the , , or jogging keys and press the key (ENTER) to confirm the new origin position. To initiate the LOAD instruction press the **1** or **2** key to initiate a load sequence for a ROLL or SHEET respectively. Upon termination of any of these instructions, the printer goes on line again.

The LOAD instruction is used to initiate a load sequence.
The RESET instruction performs a complete reset of the printer.

The ON LINE Key

The key (ON LINE) toggles between on line and off line operation. When the key is pressed, the selected mode (ON LINE or OFF LINE) is displayed on the LCD.

Selecting OFF LINE will suspend all operations in progress. Pressing the key while the printer is off line will make the machine go on line again, resuming the suspended operation.

While the machine is off line, the following operations can be performed:

- Press the or jogging key to make the media move forward (towards you) or backward (away from you). Moving the media forward will prove to be very practical when you require to cut the finished sign off manually.

The MENU Key

The key (MENU) is used to select one of the menus. Pressing the key will make the BigPaint go off line. Pressing the key repeatedly will display the different menus one by one. As the menu options are on a loop, pressing the key when the last option is displayed will automatically return you to the first option.

The different menus are illustrated in Figure 2-2.

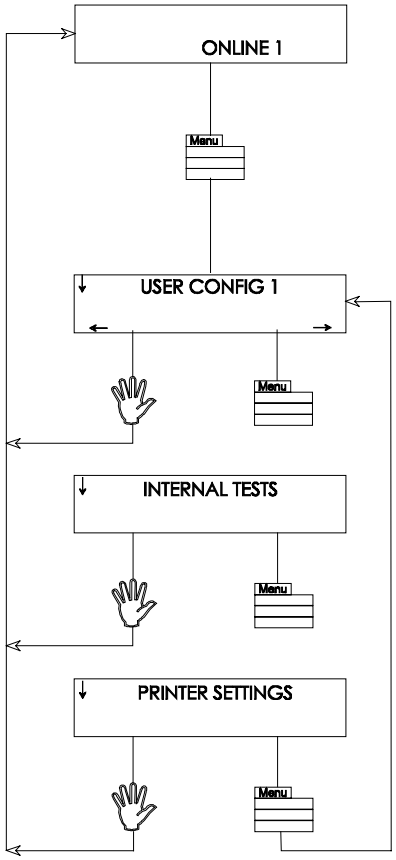


FIGURE 2-2
BIGPAINT CONFIGURATION SUBMENUS

To select a menu by scrolling through the different options, press the jogging key .

To exit the menus and resume the previous on line operation, press the key (ON LINE).

Under normal conditions, the machine is on line; it may then be selected by the host computer for a printing operation or deselected by the host computer. Pressing the or key will make the printer go off line.

The contents of the different menus are summarised in Table 2-1.

MENU	DESCRIPTION
USER CONFIG 1 (->4)	Selects a given active configuration from one of the four sets of configuration parameters stored in the unit' s memory
INTERNAL TEST	Activates one of the internal tests.
PRINTER SETTINGS	Activates the internal printing tests and printing parameters

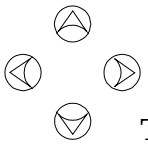
TABLE 2-1:
CONTENTS OF THE BIGPAINT MENUS

✔ The ENTER Key

The ✔ key (ENTER) is used to select the item currently displayed on the LCD.

1 2 The 1 and 2 Keys

The use of the **1** and **2** keys varies according to the operation in progress; their use is displayed on the LCD as appropriate.



The Jogging Keys

The use of the jogging keys varies according to the operation in progress.

For example, when working in the USER CONFIG menu, the or jogging key is used to select the new user number and the or jogging key is used to go to the previous or next menu item.

or Key

If the or key is pressed while the unit is online, the print carriage will move just beside the service station close the present origin. Pressing any key will move the print carriage back.

NORMAL OPERATION

The term "normal operation" covers on line operation, off line operation and local operation, i.e. the three types of operation for actual printing. They are explained in further detail in the following paragraphs.

On line and Off line

On line and off line are two important concepts when using the BigPaint. The printer is on line only when one of the following messages is displayed on the LCD :

Online:

This display message should be read as follows :

*ON LINE	=	printer is ready to receive data
1	=	user number

When on line, the printer can be addressed by the host computer, which means that the printer will execute printing instructions issued by the host computer' s application software.

For normal operations, the printer **MUST** be on line, so that it can receive instructions from the host computer and the printing/cutting software.

When the machine is on line, the following conditions must be met:

- The printer must be powered ON.
- Media must be loaded. For detailed media loading instructions, see Section 1.8 .
- The unit must be connected to the host computer via the parallel interface and / or the RS-232-C link.
- The unit must be configured for the scheduled operation.

To put the printer off line, press the , or

key. Pressing the key will suspend the current printing operation until printer is put online again.

Local operation

Local operation is only possible while the machine is off line. Local operation means that the machine is operated directly by the operator via instructions entered on the control panel.

➔ To work in local operation mode, proceed as follows:

1. If the machine is still on line, press the key once to select off line. The media will move forward over a certain distance.
2. To make the media move forwards (towards you) or backwards (away from you), press the or jogging key.
3. To end local mode and put the printer on line again, press the key.

THE USER CONFIG MENU

The USER CONFIG(uration) menu gives access to different submenus which allow you to configure the printer' s operating parameters.

Four different user configurations can be saved. The selected configuration number is displayed on the LCD next to the USER CONFIG message. These four USER CONFIG 1(->4) menus are maintained independently.

➔ To select another **configuration number**, proceed as follows:

1. Power on the printer.
2. Press the Menu key until USER CONFIG 1(->4) is displayed.
3. Press the ◁ or ▷ jogging key until the desired configuration number is displayed next to USER CONFIG.

> **NOTE**
>
> Before altering any of the items in the USER CONFIG menu, make sure that you have previously selected the right configuration number in the USER CONFIG 1(->4) menu.

Figure 2-3 shows the USER CONFIG submenus.

➔ To select and alter a configuration parameter, proceed as follows:

1. Power on the printer.
2. Press the Menu key until USER CONFIG 1(->4) is displayed.
3. Press the, ▽ or △ jogging key until the desired submenu is displayed on the first line of the LCD.
4. Press the ◁ or ▷ jogging key until the desired value is displayed on the second line.
5. Press the ✔ key to confirm the selection, an * will be displayed next to the selected setting. (An * is always displayed next to the active value.)

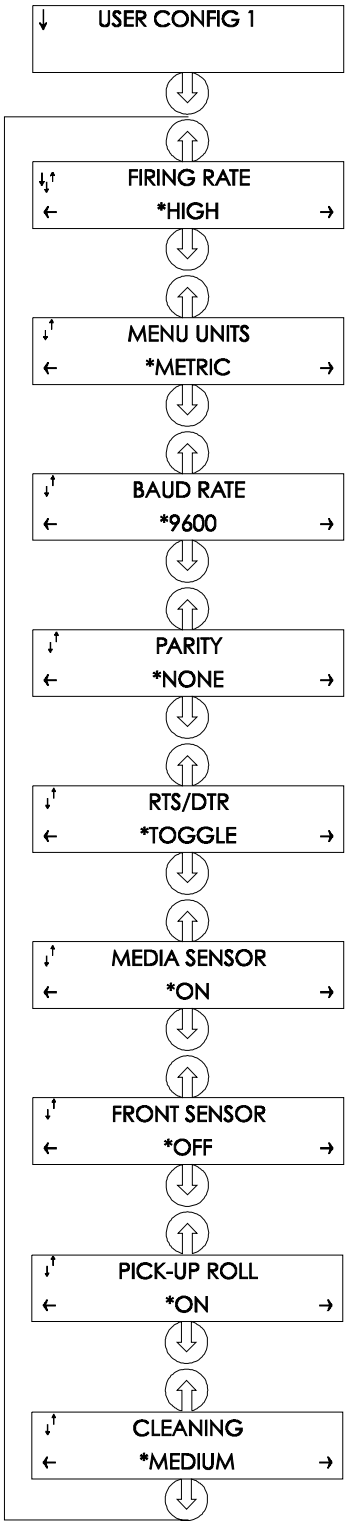


FIGURE 2-3
FLOWCHART SHOWING FACTORY PRESET MENU SETTINGS

FIRING RATE

The firing rate submenu is used to set the speed of printing. When using ink types with a high viscosity it is advised to lower the firing rate to obtain a better print quality and a longer life time of the ink cartridges. Lowering the firing increases the time of printing.
The default firing rate is high.
The firing rate can be set to LOW, MEDIUM and HIGH.

MENU UNITS

The MENU UNITS submenu allows you to select English or metric menu units

For models sold in the US, English units are the default setting.
For models sold in Europe, metric units are the default setting.
On the LCD, the active menu units setting is marked with an *.

BAUD RATE

The BAUD RATE submenu is used to set or modify the operating baud rate for RS-232-C serial communications between your printer and the host computer.

The default baud rate is 9600 bps.
The baud rate can be set to any of the following values: 2400 bps, 4800 bps, 9600 bps, 19200 and 38400 bps.
On the LCD, the active baud rate value is marked with an *.

> **NOTE**
>
> The baud rate setting of your printer MUST match the host computer' s baud rate setting.

PARITY

The PARITY sub-menu is used to set or modify the byte format and parity type for RS-232-C serial communications between your printer and the host computer.

The default parity setting is bit 8 = 0 (8 data bits, no parity, the 8th bit being a low bit). The parity can be set to any of the following values:

LCD information	Parity setting	Remarks
NONE	8 data bits, no parity	bit 8 = low (0)
MARK	8 data bits, no parity	bit 8 = high (1)
EVEN	7 data bits, 1 parity bit	parity bit = even
ODD	7 data bits, 1 parity bit	parity bit = odd

On the LCD, the active parity setting is marked with an *.

NOTE

The parity setting of your printer MUST match the host computer' s parity setting.

RTS/DTR

The RTS/DTR submenu controls the Request To Send (RTS) and Data Terminal Ready (DTR) signals of the printer' s RS-232-C serial communications interface for hardware handshaking.

The RTS/DTR default value is TOGGLE.
RTS/DTR can be set to TOGGLE (hardware handshaking) or HIGH (software handshaking).
On the LCD, the active handshaking setting is marked with an *.

MEDIA SENSOR

The MEDIA SENSOR sub-menu is used to activate or deactivate the media sensors. On the LCD, the active setting is marked with an *.
The sensors detect whether media is loaded or detect the end of media. The sensors prevents wasting ink.

Front sensor

The FRONT SENSOR sub-menu is used to activate or deactivate the front media sensors. On the LCD, the active setting is marked with an *.
The front sensors detects the front edge of the media. Disabling the front sensors prevents that the media is pulled back in the loading sequence (max. 1meter). This is necessary when the pick-up roll is used.

PICK-UP ROLL

The PICK-UP ROLL sub-menu is used to activate or deactivate the pick-up roll. When using sheets or when you simply do not want to use the pick-up roll you can switch it off. The default setting is ON.
On the LCD display, the active setting is marked with an *.

cleaning

The CLEANING sub-menu is used to set the cleaning frequency of the cleaning procedure.
While printing, the print carriage moves periodically to the service station to clean the print heads and to spit some ink out of all its nozzles to prevent the nozzles from blocking. It is advised to set the cleaning as low as possible to work faster and save ink. In this way the reservoirs of the service station can be used longer before they need to be cleaned (see section 3).
However, if the cleaning frequency is too low, the nozzles will block.
The default setting is MEDIUM.
Cleaning can be set to OFF, LOW, MEDIUM and HIGH.

INTERNAL TEST MENU

➔ To access any internal test, proceed as follows:

1. Power the machine on.
2. Press the Menu key until INTERNAL TEST is displayed and press the jogging key.
3. Press the or jogging key until the desired internal test is displayed.
4. To perform the test, press the ✔ key.

To exit from this menu and go to another menu, press the Menu key until the desired menu is displayed.

To exit from the menus and put the printer on line again, press the key.

Figure shows the different INTERNAL TEST submenus.

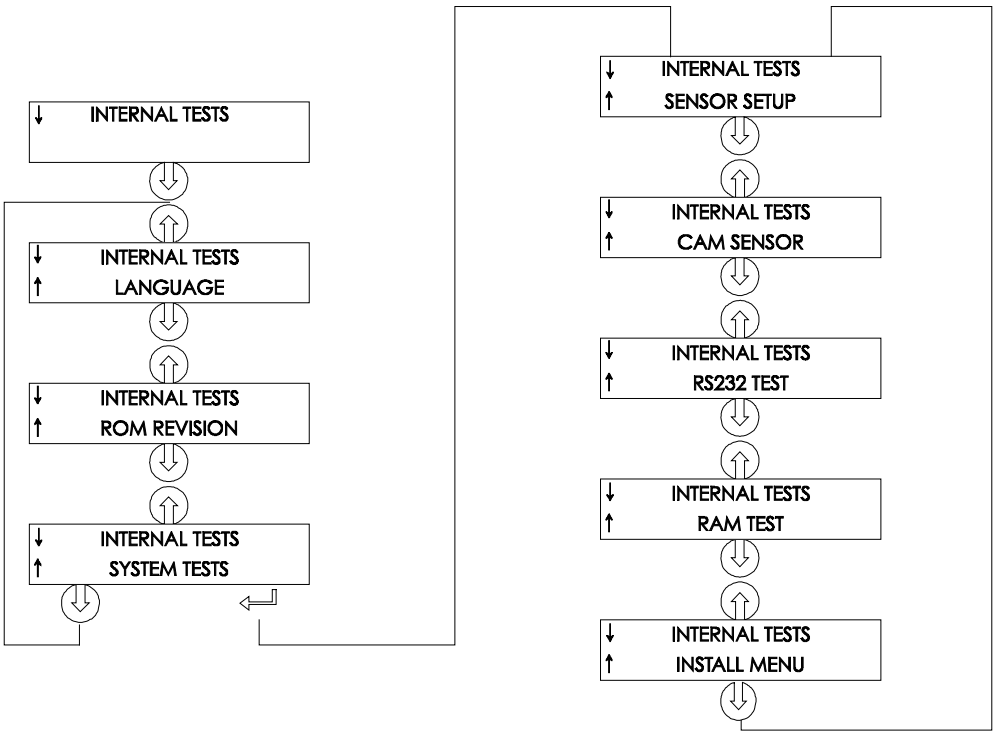


FIGURE 2-4
INTERNAL TESTS SUBMENUS

LANGUAGE

The MENU LANGUAGE sub-menu is used to set or modify the dialogue language on the LCD. Press the or jogging key until the desired language is displayed on the LCD and press ✔ to confirm. The information on the LCD can be displayed in English, French, German, Dutch, Spanish or Italian.

ROM REVISION

Selecting the ROM REVISION option, by pressing the ✔ key will furnish the details on the printer' s ROM revision. This information is often helpful to technicians when diagnosing problems over the telephone.

SYSTEM TESTS

The SYSTEM TESTS sub-menu covers the menu items you only occasionally need to adjust .

Press the **ENTER** key to access the different sub-menu items which are explained in section 2.6 below.

SYSTEM TESTS

The SYSTEM TESTS menu is a special set of procedures which are not required for normal printer operation. Field service personnel, however, will use the SYSTEM TESTS menu occasionally. When in SYSTEM TESTS, the printer is fully operational and performs as described in this manual.

SENSOR SETUP

The SENSOR SETUP option is a useful routine to check whether or not the front and rear media sensor are functioning properly and whether the switching levels of these sensors are correctly set.

CAM SENsOR

The OPTICAL SENSOR option is a useful routine to check whether or not the cam sensor is functioning properly. The cam sensor is the sensor mounted at the back of the carriage. This sensor senses the location of the pinch rollers.

RS232 TEST

The RS232 TEST routine verifies the unit' s RS-232-C serial communications (transmit data, receive data, and hardware handshaking) circuits. For this the printer has to be disconnected from computer and pin 2&3 and 7&8 have to be shorted.

RAM TEST

This test completely checks the RAM bit by bit.
When running this test the unit will not respond. After this test, power the unit off, then on again.

INSTALL MENU

The INSTALL MENU routine restores the factory-defined menu settings in all four USER CONFIG menus.

printer settings

➔ To access any printer setting, proceed as follows:

1. Power the machine on.
2. Load printing media.
3. Install the ink cartridges.
4. Press the Menu key until PRINTER SETTINGS is displayed and press the jogging key.
5. Press the or jogging key until the desired printer setting is displayed.
6. To perform the test (if available) press the **1** key.
7. To change parameters (if available), press the ✔ key.

To exit from this menu and go to another menu, press the Menu key until the desired menu is displayed.

To exit from the menus and put the machine on line again, press the key.

Figure 2-6 shows the different PRINTER SETTINGS sub-menus.

NOTE

The printer settings are not related to the user configurations. (For all four user configurations the same values are used.)

Note

All the tests described further in this section can also be activated through the SummaPaint Control program. To install this program read the readme.txt file on the installation disk.

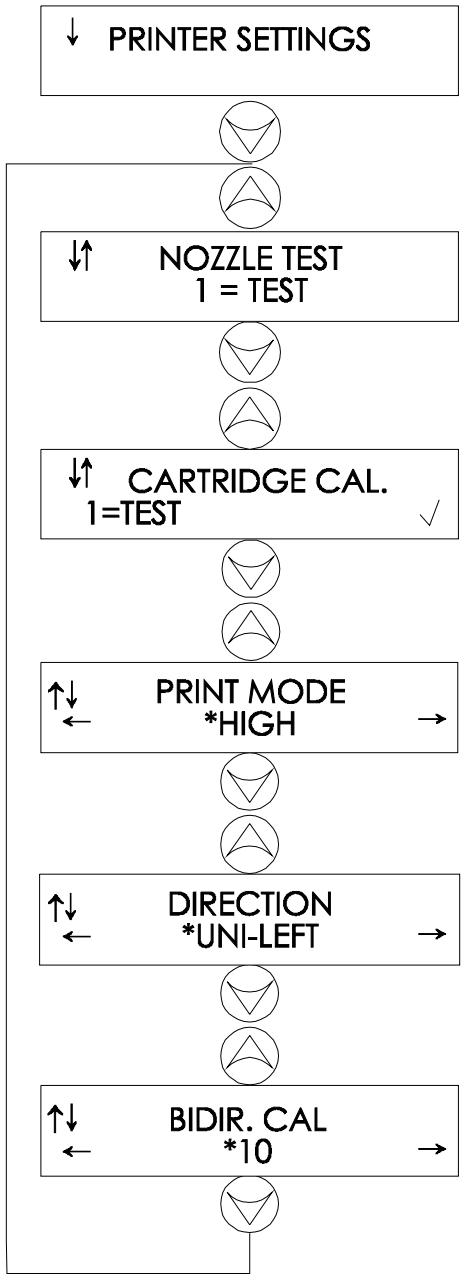
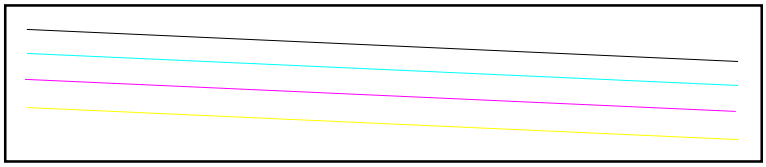


FIGURE 2-5
PRINTER SETTINGS

NOZZLE TEST

To make sure that all nozzles of the 4 cartridges are working properly, do the NOZZLE TEST.

Press the **1** key to perform a nozzle test as illustrated in the figure below.



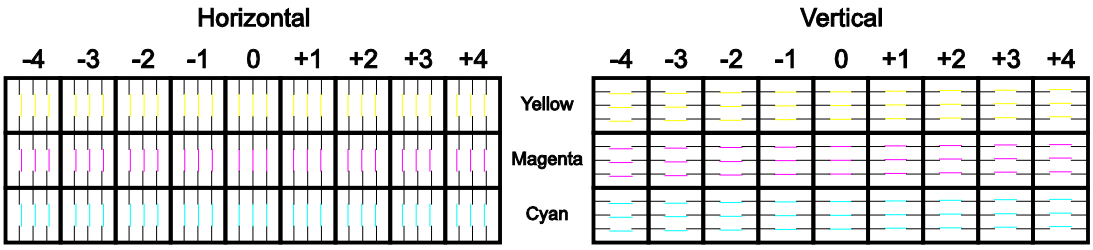
NOZZLE TEST PATTERN

When all nozzles are working fine, the four slanting lines will be continuous. If one color line is interrupted, one ore more nozzles will be blocked. Repeat this test a second time. If some nozzles are still blocked, the cartridge needs to be cleaned (see section 3).

cartridge cal.

The CARTRIDES CAL(ibration) aligns the cartridges.

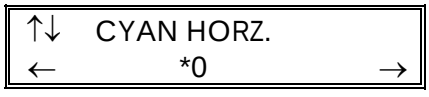
Press the **1** Key to perform a color calibration test as illustrated below:



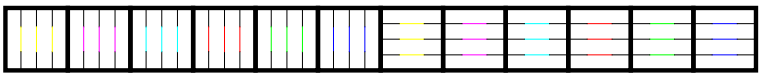
After printing the color calibration test you can change the values for the horizontal and vertical offset of the printed color with reference to the black.

Select again 'COLOR CAL.'

Press the ✔ key to change the color calibration parameters.



Examine the horizontal and vertical tests carefully. Verify per row in which square the colored lines are in a direct line with the black lines. The value figuring on top of the corresponding column is the value that has to be entered. Press the ◁ and ▷ jogging keys to change the value. Press the ✔ key to confirm the selection (an * appears in front of the value). Press the ▽ and △ jogging keys to switch between the different parameters. After changing the values a final test can be done by pressing the **1** Key.

Result : 

print mode

The PRINT MODE sub-menu is used to set print mode.
The PRINT MODE default value is HIGH.
PRINT MODE can be set to High, MEDIUM or DRAFT.
The draft mode is fast but can only be used for line drawings or technical drawings.

direction

The DIRECTION sub-menu determines during which print-carriage movement the machine actually prints.
The default setting is UNI-LEFT.
DIRECTION can be set to UNI-LEFT, UNI-RIGHT and BI-DIRECTIONAL.
UNI-LEFT : Printing takes place while the carriage moves to the left.
UNI-RIGH : Printing takes place while the carriage moves to the right.
BI-DIRECTIONAL: Printing takes place while the carriage moves to the left and also when it moves to the right. The BI-DIRECTIONAL mode is fast but requires an additional calibration (see 2.0).

Bi-dir CAL

The BI-DIR(ectional) CAL(ibration) aligns the left and right printing movements to each other in order to print bi-directional.

In line drawings the result of the bi-directional calibration can easily be seen.
Examine whether the lines are smooth. If the lines are not in a direct line then the bi-directional value has to be changed.

The values can be changed by pressing the and jogging keys. Press the ✔ key to confirm the selection (an * appears in front of the value).

NOTE

When using the BigPaint Control program, a special test can be activated to do the bi-directional calibrating test.

SECTION 3

GENERAL INFORMATION

MAINTENANCE & cleaning

The BigPaint has a number of sliding surfaces made of smooth metals and plastics. They are virtually friction-free and require no lubrication. They will, however, collect dust, which may affect the performance of the machine. Keep the Bigpaint as clean as possible by using a dust cover. When necessary, clean the unit with a soft cloth dampened with isopropyl alcohol or mild detergent. Do not use abrasives.

Cleaning the service station.

NOTE

When the machine is used intensively it is obliged to clean the service station daily.

The service station contains ink reservoirs. The head will spit in these reservoirs periodically to prevent the nozzles from blocking. If the service station is not cleaned regularly, the ink will overflow and cause difficulties.

➔ To clean the *standard* service station, proceed as follows:

1. Power on the unit. Make sure that the media is properly loaded.
2. When the unit is 'Online' press the key. The print carriage will move beside the service station. Every three seconds a beep will warn you that the print carriage is not in the service station.

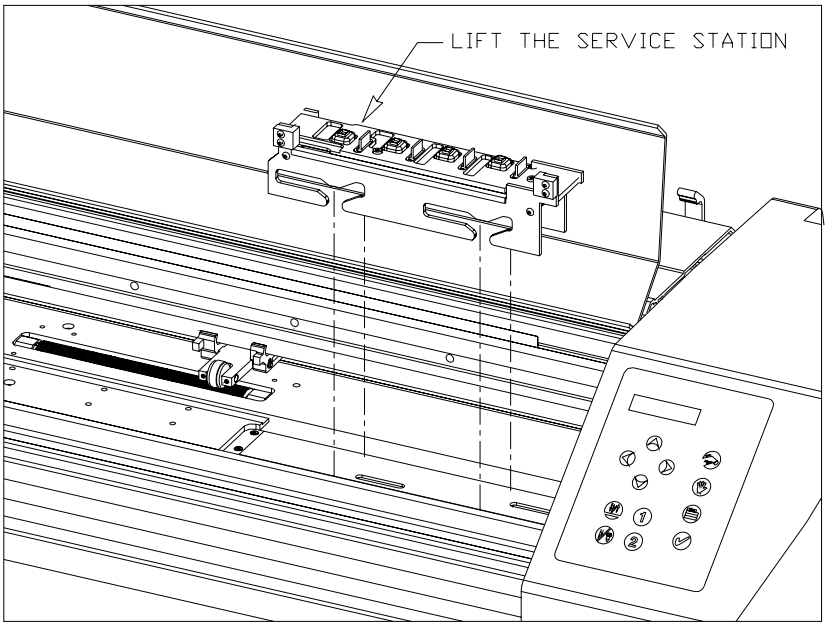


FIGURE 3-1
CLEANING THE SERVICE STATION

3. Lift the service station and move it a little so that it comes free from the machine body.

4. First hold the complete service station in a tank of water. This will allow most of the ink to flow away. Then clean the service station more carefully with a soft dampened cloth.

CAUTION

Consult your local Authority for regulations regarding the waste of used water.

5. Dry the service station as well as you can to prevent corrosion.

6. Place the service station back in place.

7. Move the service station as far as possible to the left.

8. Press on any key so that the print carriage moves back.

➔ To clean the service station *for pigmented inks*, proceed as follows:

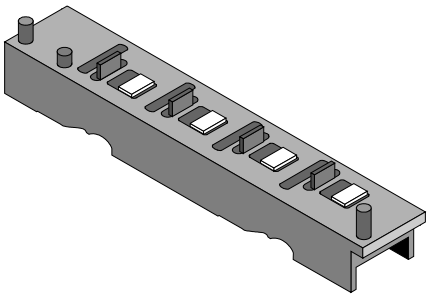


FIGURE 3-2
SERVICE STATION FOR PIGMENTED INKS

1. Power on the unit and wait until the load procedure has finished.

2. When the unit is online, press on the key so that the print carriage moves away from the service station.

3. Take the Service station out of the unit and flush the station with water (Do this daily). Dry the service station. The cotton may stay quite wet.
   → It is good to use a lot of water to get the cartridge running (at the beginning of a day). But, while printing, it is advised that the cottons are not made too wet.

CAUTION

Consult your local Authority for regulations regarding the waste of used water.

4. Place the service station back.

5. Press any key to move the print carriage back in position.

6. Wait a few minutes so that the water can penetrate the nozzles.

7. Perform a nozzle test. It may be necessary to print a strip of each colour to get the cartridge started.

8. If necessary, put a few drops of water on the cottons. DON'T PUT TOO MUCH WATER ON THEM.

9. If the cartridges will not be used for a while it is advised to put some extra water on the cotton.

10. If the cartridges will not be used for several days, however, it is advised to put them back in the clamp.

NOTES:

- **If you do not use pigmented inks it is advised not to use this service station.**
- **Never use two different types of ink without flushing the cottons.**
- **When using pigmented inks and when the unit is not used continuously, the tubes need to be flushed regularly (once a week).**

cleaning cartridges

When a cartridge has blocked nozzles, try the following suggestions to make them work again. Repeat the first suggestion a few times before trying the other suggestions.

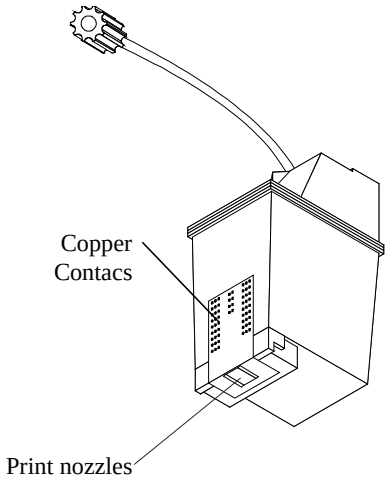


FIGURE 3-3
Cleaning Ink Cartridge

- Clean the nozzles with a soft dampened cloth. Pressing the sides of the cartridge will force ink to come out of the nozzles. Do this while holding the print nozzles downwards.
- Clean the copper contacts of the cartridge with a soft cloth.
- Clean the copper contacts of the print carriage with a soft cloth.
- To find out whether a cartridge is not working properly anymore due to blocked nozzles or bad contacts, switch two cartridges from place and repeat the prime test.
- If the cartridge is still not working fine, force some ink to come by pumping air in the ink bottles with the prime bulb while printing. However, do not do this when printing final pictures. The cartridge could start leaking for a while.
- If the cartridge is still not working fine, place it on top of a wet (destiled water)cloth during a few minutes so that the water has time to dissolve the blocked nozzles.
- If the cartridge is still not working fine, immerse the nozzles in an ultrasonic bath for about 30 seconds.
- Hold the print head above steaming water for about 30 seconds.

cleaning tool

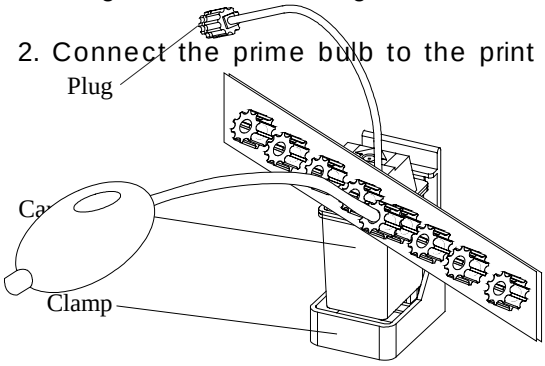
The BigPaint is also equipped with an extra cleaning tool in order to clean the tubes more easily.

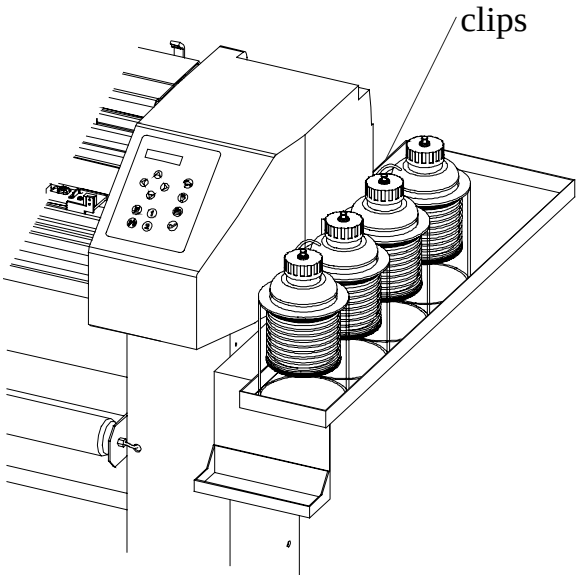
It is advised to clean the tubes of the ink delivery system :

- **When a set of tubes will not be used for a couple of days.**
- **Weekly or monthly, depending on the type of ink. When using pigmented ink a weekly flush will prevent clogging.**

➔ To clean the tubes, proceed as follows:

1. Close the tubes of the ink supply system by means of the clips. Take the cartridge out of the carriage and place it in the clamp. Disconnect the cartridge and put a plug on the tube coming out of the cartridge.

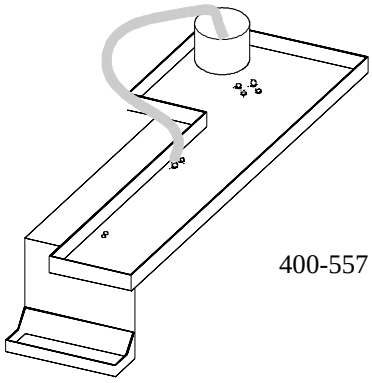




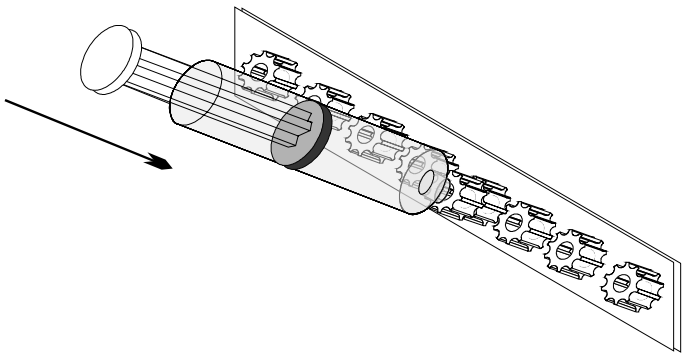
2. Connect the prime bulb to the print carriage. Open the clips, and press a few times on the prime bulb to flush the ink back into the reservoir.

3. When all the ink has been removed, close the clips again. Remove the prime bulb, and disconnect the reservoir. Place the reservoir in a safe place.

4. Connect the cleaning tube there where the reservoir was connected. Place the other end of the tube in a container.



400-557



5. Fill the syringe with distilled water and connect it to the print carriage. Gently inject the water through the tubes.

6. Disconnect the syringe, reconnect the prime bulb and blow all the water into the container.

7. Reconnect the ink reservoir and install the cartridges as described in section 1.

CLEANING THE drive sleeves

After a time, the sleeves of the drive drum may become clogged with accumulated residue from the media. This situation may affect the traction as the media will tend to slip between the pinch rollers and the drive sleeves.

➔ To clean the drive sleeves, proceed as follows:

1. First disable the sensors by covering them, or via the configuration menu (see 2.4.12 Media Sensor).

2. Place the printer in local operation. (See Section 2.2.2.) Local operation will allow you to use the control panel jogging keys, even when no media is loaded.

3. Remove the backing from a piece of vinyl. Place the vinyl with the tacky side down between one of the pinch rollers and a drive sleeve. Lower the pinch roller arm.

4. Use the ⓐ and ⓑ jogging keys to move the piece of vinyl backward and forward several times, until all residue is removed from the drive sleeves.

5. Raise the pinch roller arm and remove the piece of vinyl.

6. Repeat steps 3 through 5 for the other drive sleeves.

7. Set the machine' s power switch to OFF.

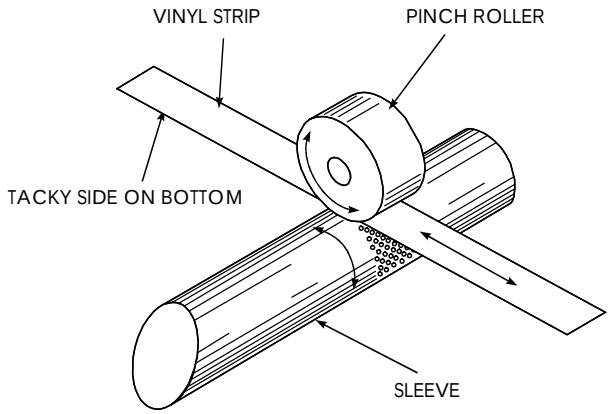


FIGURE 3-4
CLEANING OF THE DRIVE SLEEVES

cleaning the sensors.

After a certain time, the sensor may become dirty with accumulated residue from the media. This situation may cause malfunctioning of the unit.

➔ To clean the sensor area, proceed as follows:

1. The sensors are located on the machine' s right side. One sensor is located on the front platen, the other sensor is located on the rear platen.

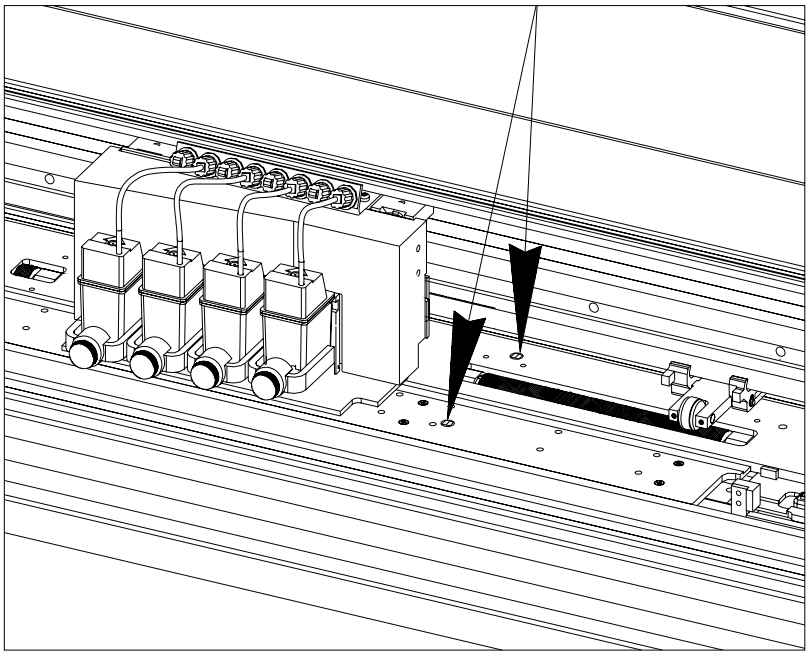


FIGURE 3-5
LOCATION OF THE SENSORS

2. To keep the sensors clean, it is sufficient to wipe them out now and then with a cotton swab.

Cleaning the Y-guiding.

After a certain time, the y-guiding may become dirty with dust and accumulated residue from the carriage wheels. This may lead to bad printing quality.

➔ To clean the y-guiding, proceed as follows:

1. Set the machine' s power switch to OFF, and open the safety cover.

2. The Y-guiding is the guiding on which the is moving.

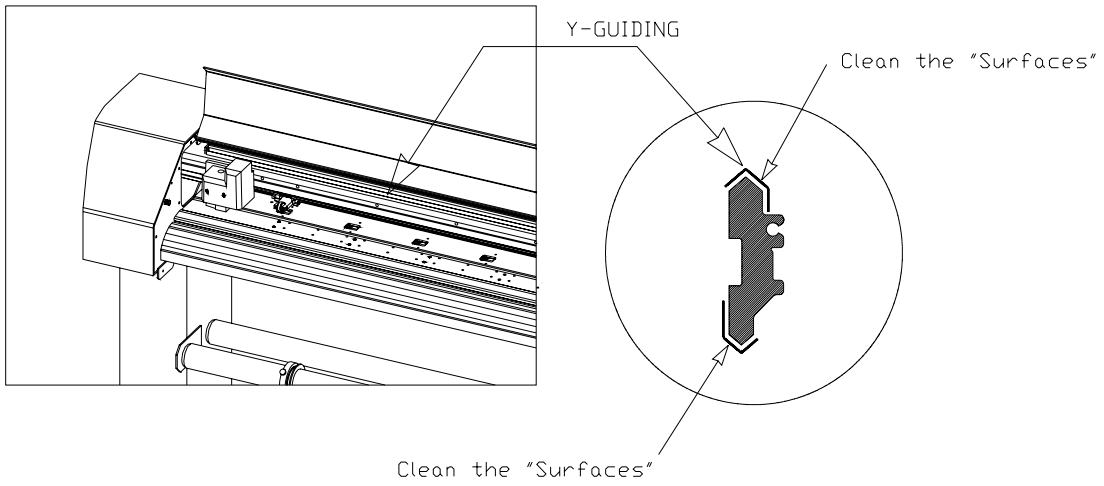


FIGURE 3-6
CLEANING THE Y-GUIDING

3. Clean the surfaces that are under a 45 degree angle with a soft cloth (both on top and underneath).

4. Move the carriage manually so that you can clean the complete guiding.

Cleaning the Encoder strip

After a certain time, the encoder strip may become dirty, which may cause the drawing to shift while printing.

CAUTION

The encoder strip is an essential and very fragile part. Handle it with extreme care.

➔ To clean the encoder strip, proceed as follows:

1. Set the machine' s power switch to OFF.

2. Open the safety-cover partly with one hand, and reach with the other hand under the safety cover to open the top cover.

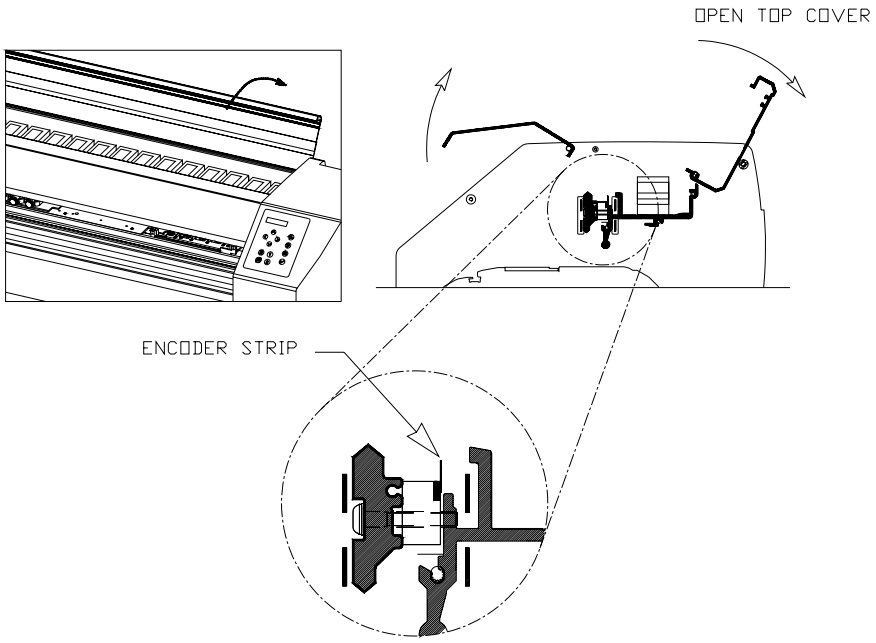


FIGURE 3 - 1
CLEANING THE ENCODER STRIP

3. The encoder strip is situated about 2,5 cm (1") behind the Y-guiding (see 3.0).

4. Clean both sides of the strip extremely carefully with a soft cloth. Move the carriages manually so that you can clean the complete strip.

Operating voltage conversion

Before operating the machine for the first time it is advised to check the fuse rating for security reasons.

To check the fuse(s), remove the fuse(s) from the fuse box behind the cover plate of the power entry module. Changing to another operation voltage also implies a change of the fuse rate.

For 100 or 120 V AC operation, use only T 4 A,250V fuses, 5 x 20 mm (MF9004).
For 220 or 240 V AC operation, use only T 2 A,250V fuse, 5 x 20 mm (MF9003).

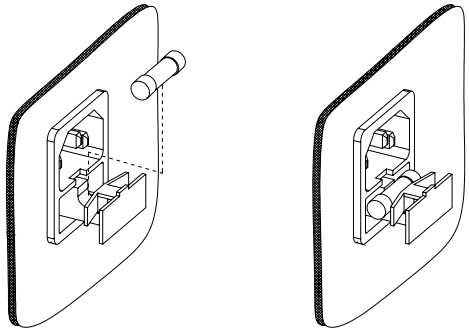


FIGURE 3-8
POWER ENTRY MODULE

Fuse change (see Figure) :

- Unplug the power supply cable
- Remove the fuse block
- Replace the fuse with the correct fuse that corresponds with the nominal voltage
- Re-install the fuse block

NOTE

Always make sure that you are using the correct fuses for your voltage selection.

SECTION 4
INTERFACE

4.1. INTRODUCTION

This section describes the signal connections for RS-232-C serial communication and the Centronics parallel connection between your BigPaint and the host computer. When connecting the unit to the host computer, always use the original CalComp cables.

NOTE

Extension cables that are too long between the host computer and the PC1500 can cause bad communication.

4.2. INTERFACE NOTES

4.2.1. SYSTEM SETUP

The BigPaint has to be connected Parallel. The Serial connection is optional. Without serial communication it is not possible to have feedback from the unit. The serial communication parameters has to be set correctly:

4.2.1.1. MS-DOS or PC-DOS operating system

➔ To set up your serial communication, proceed as follows:

1. Boot up the operating system.

2. If the printer is to be connected to serial port #1 (known as COM1) the port must be configured by entering the following command at the system prompt: MODE COM1:9600,N,8,2,P.

3. If the printer is to be connected to serial port #2 (known as COM2) the port must be configured by entering the following command at the system prompt: MODE COM2:9600,N,8,2,P.

4. The computer end of the cable must be plugged into the serial port defined as COM1 (or COM2). The printer' s baud rate must be set to 9600, with parity NONE and RTS/DTR mode set to TOGGLE.

4.2.1.2. Windows 3.xx.

➔ To set up your serial communication, proceed as follows:

1. Select "Main group" in the Program Manager. Select "Control Panel', then "Ports" and then the port that is connected to the unit. Press the "Settings" Button to see the port settings.

2. The default settings of the cutter are as follow:
   - Baudrate : 9600 (see 2.2.10.)
   - Data Bits : 8
   - Parity : none (see 2.2.11.)
   - Stop Bits : 2
   - Flow Control : Hardware or Xon / Xoff

4.2.1.3. Windows 95

➔ To set up your serial communication, proceed as follows:

1. Press the "Start" Button and select "Settings", continued by "Control Panel". Press on the "System" icon and select the "Device Manager" tab. Select the port that is connected to the cutter and click on the properties button. Select the "Port Settings" tab to set the port settings.

2. Analogous to 4.2.1.2.

4.2.2. SERIAL INTERFACE CONNECTOR ON PRINTER

RS-232C Serial Interface Connector		
Pin n°	*Signal*	*Description*
1	NC	Not Connected
2	RXD	Receive Data
3	TXD	Transmit Data
4	DTR	Data Terminal Ready
5	GND	Signal ground
6	NC	Not connected
7	RTS	Request To Send
8	CTS	Clear To Send
9	NC	Not Connected

4.2.3. PARALLEL INTERFACE CONNECTOR ON PRINTER

The use of a shielded parallel cable is required.

Parrallel interface Connector			
1	-Data Strobe	19	Ground
2	Data 1	20	Ground
3	Data 2	21	Ground
4	Data 3	22	Ground
5	Data 4	23	Ground
Pin n°	Definition	Pin n°	Definition
6	Data 5	24	Ground
7	Data 6	25	Ground
8	Data 7	26	Ground
9	Data 8	27	Ground
10	-Acknowledge	28	Ground
11	Busy	29	Ground
12	Paper End	30	Ground
13	Select	31	-Input Prime
14	Not Connected	32	-Fault
15	Not Connected	33	Not Connected
16	Logical Ground	34	Not Connected
17	Chassis Ground	35	Not Connected
18	Positive 5V	36	Not Connected
-Negative true logic			

4.3. AVAILABLE SERIAL SIGNALS

If you are making your own cable, only a few of the printer pins will actually need to be connected to the host computer. To ensure optimum results, the cable length should not exceed 4.8 m (16 feet). It should

be taken into account that your computer or printing software may also require additional loopback connections at the host computer' s end of the data cable.

- Connect the Transmit Data (TXD) pin of the computer to pin #2 of the printer.
- Connect the Receive Data (RXD) pin of the computer to pin #3 of the printer.
- For hardware handshaking, connect the Clear To Send (CTS) pin of the computer to pin #4 or pin #7 of the cutter. Connect the Request To Send (RTS) pin of the computer to pin #8 of the printer.
- Connect the ground (GND) pin of the computer to pin #5 of the printer

APPENDIX A

MEDIA CERTIFICATION

Types of media

A wide range of media types has been evaluated and extensively tested on the BigPaint. To ensure operation in compliance with the functional specifications of the printer as listed in Section 1 of the User' s Manual, only duly certified media should be used.

An alphabetic list of all duly certified media is included below. Before using other media, please contact your local CalComp representative for advice.

Printing Media

CALCOMP	IJM-VINYL-M IJM-VINYL-G IJP-HIGLOSS IJP-SEMIGLOSS IJM-CANVAS IJM-CLEAR IJM-BACKLITE IJP-PHOTO-PRES IJF-WHITE-OP
AVERY	IPM 1000E IPM 1020E
MACTAC	JT 1828 JT 1658
MULTIFIX	SERIE 5000
REXAM	IDEYLC160 IDPYLC160 IDEYHC160 PHGJ7 IDEVLC125r DMVLA5 IDEVLC125 IDEVHC125 IDECH500
3M	8502

APPENDIX B

MATERIAL SAFETY DATA SHEET

SHEET 1:
YELLOW AND BLACK INK CARTRIDGES

IDENTIFICATION OF THE SUBSTANCE / PREPARATION, REVISION NUMBER AND DATE

Product Name : SUMMAPAINT COLOR KITS (YELLOW AND BLACK WATER BASED INKS)
Product Code :
Revision No : A
Date : 01/97

COMPOSITION / INFORMATION ON HAZARDOUS INGREDIENTS (nl - not listed in CHIP)

Chemical Name	%	CAS Number	EEC No	Hazard Symbol	R Phrases

Contains no hazardous ingredients as defined by CHIP II regulations

HAZARDOUS IDENTIFICATION

Classification (CHIP) : None required

Main Health Hazards : None

FIRST AID

Inhalation : N/A

Skin Contact : Wash from skin using soap and water.

Eye Contact : Flush thoroughly with water. If soreness or redness persists, seek medical attention.

Ingestion: DO NOT induce vomiting, encourage casualty to drink water. Seek medical advice.

Do not use:

FIRE FIGHTING MEASURES

Flammability : Product is not flammable.

Combustion products : None known.

Extinguishing media : In the event of a fire use CO2, Foam, Dry Powder, or Vapourisng Liquid.

Do not use :

Measures :

ACCIDENTAL RELEASE MEASURE

Mop or soak up spillage' s in absorbent material. Dispose of in accordance with Local Authority Regulations.

HANDLING AND STORAGE

Handling : Avoid prolonged skin contact. Wear gloves and safety glasses if splashing is likely.

Fire Prevention : Not applicable

Storage : Normal cool warehouse conditions.

EXPOSURE CONTROLS / PERSONAL PROTECTION

Respiration protection : Not essential.
Eye and Skin protection : Wear safety glasses and gloves if splashing is likely.

OCCUPATIONAL EXPOSURE LIMITS :

Substance listed in EH40/92	Long term (8 Hrs) ppm	mg/m3	Short term(10 min) ppm	mg/m3

PHYSICAL AND CHEMICAL PROPERTIES

Form : Yellow or Black coloured liquid
Flashpoint : Not applicable
Vapour Pressure : 0.023 bar @ 20° C
Solubility in Water : Completely miscible in water
Autoignition Point : N/A
pH : Approx. 8
Melting Point : -3° C
Vapour Density :
Density : Approx. 1.01
Explosive Limits: N/A

STABILITY AND REACTIVITY

Chemical reactivity : None

decomposition products : None

Materials / conditions to avoid : None

TOXICOLOGICAL INFORMATION

ECOLOGICAL INFORMATION

DISPOSAL CONSIDARATIONS

Consult Local Authority for regulations regarding waste disposal

TRANSPORT REGULATIONS

Proper shipping name : Not applicable
UN Number : Not applicable
IMDG code : Not applicable
ICAO/IATA class : Not applicable
Marine pollutant :

Packing group : Not applicable
IMDG class : Not applicable
RID / ADR : Not applicable
Hazard warning sign : Not applicable

REGULATORY INFORMATION

CHIP labelling - Symbol : none Hazard : None Contains :

Other suggested labelling : None

AND REACTIVITY

Chemical reactivity : None

decomposition products : None

Materials / conditions to avoid : None

OTHER INFORMATION

THIS SAFETY DATA SHEET HAS been updated to comply with CHIP regulations.

SHEET 2:
CYAN AND MAGENTA INK CARTRIDGES

IDENTIFICATION OF THE SUBSTANCE / PREPARATION, REVISION NUMBER AND DATE

Product Name : SUMMAPAINT COLOR KITS (CYAN AND MAGENTA WATER BASED INKS)
Product Code :
Revision No : A
Date : 01/97

COMPOSITION / INFORMATION ON HAZARDOUS INGREDIENTS (nl - not listed in CHIP)

Chemical Name	%	CAS Number	EEC No	Hazard Symbol	R Phrases
Isopropyl Alcohol	< 3	67-30-0	200-661-7	Flame/ St Andrews Cross	R11
n-Methyl-2-Pyrrolidone	< 4	872-50-4	212-828-1	St Andrews Cross	R36/38

R11 = Highly flammable; R36/38 = Urritating the eyes and skin

HAZARDOUS IDENTIFICATION

Classification (CHIP) : None required

Main Health Hazards : None

FIRST AID

Inhalation : N/A

Skin Contact : Wash from skin using soap and water.

Eye Contact : Flush thoroughly with water. If soreness or redness persists, seek medical attention.

Ingestion: DO NOT induce vomiting, encourage casualty to drink water. Seek medical advice.

Do not use:

FIRE FIGHTING MEASURES

Flammability : Product is not flammable.

Combustion products : None known.

Extinguishing media : In the event of a fire use CO2, Foam, Dry Powder, or Vapourisng Liquid.

Do not use :

Measures :

ACCIDENTAL RELEASE MEASURE

Mop or soak up spillage' s in absorbent material. Dispose of in accordance with Local Authority Regulations.

HANDLING AND STORAGE

Handling : Avoid prolonged skin contact. Wear gloves and safety glasses if splashing is likely.

Fire Prevention : Not applicable

Storage : Normal cool warehouse conditions.

EXPOSURE CONTROLS / PERSONAL PROTECTION

Respiration protection : Not essential.
Eye and Skin protection : Wear safety glasses and gloves if splashing is likely.

OCCUPATIONAL EXPOSURE LIMITS :

Substance listed in EH40/92	Long term (8 Hrs) ppm	mg/m3	Short term(10 min) ppm	mg/m3
Isopropyl Alcohol	400	980	550	1225
n-Methyl-2-Pyrrolidone	100 (estimated)			

PHYSICAL AND CHEMICAL PROPERTIES

Form : Yellow or Black coloured liquid
Flashpoint : Not applicable
Vapour Pressure : 0.023 bar @ 20° C
Solubility in Water : Completely miscible in water
Autoignition Point : N/A
pH : Approx. 8
Melting Point : -3° C
Vapour Density :
Density : Approx. 1.01
Explosive Limits: N/A

STABILITY AND REACTIVITY

Chemical reactivity : None

decomposition products : None

Materials / conditions to avoid : None

TOXICOLOGICAL INFORMATION

ECOLOGICAL INFORMATION

DISPOSAL CONSIDARATIONS

Consult Local Authority for regulations regarding waste disposal

TRANSPORT REGULATIONS

Proper shipping name : Not applicable
UN Number : Not applicable
IMDG code : Not applicable
ICAO/IATA class : Not applicable
Marine pollutant :
Packing group : Not applicable
IMDG class : Not applicable
RID / ADR : Not applicable
Hazard warning sign : Not applicable

REGULATORY INFORMATION

CHIP labelling - Symbol : none Hazard : None Contains :

Other suggested labelling : None

AND REACTIVITY

Chemical reactivity : None

decomposition products : None

Materials / conditions to avoid : None

OTHER INFORMATION

This safety data sheet has been updated to comply with CHIP regulations.

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